RECEIVED MAY 31 1947

TRANSACTIONS

OF THE

AMERICAN PHILOSOPHICAL SOCIETY

HELD AT PHILADELPHIA
FOR PROMOTING USEFUL KNOWLEDGE

NEW SERIES—VOLUME 37, PART 2

THE FOOD STAMP PLAN

MOVING SURPLUS COMMODITIES WITH SPECIAL PURPOSE MONEY

JOSEPH D. COPPOCK

THE AMERICAN PHILOSOPHICAL SOCIETY
INDEPENDENCE SQUARE
PHILADELPHIA 6

MAY, 1947

TRANSACTIONS

OF THE

AMERICAN PHILOSOPHICAL SOCIETY

HELD AT PHILADELPHIA
FOR PROMOTING USEFUL KNOWLEDGE

NEW SERIES—VOLUME 37, PART 2

THE FOOD STAMP PLAN

MOVING SURPLUS COMMODITIES WITH SPECIAL PURPOSE MONEY

JOSEPH D. COPPOCK

THE AMERICAN PHILOSOPHICAL SOCIETY
INDEPENDENCE SQUARE
PHILADELPHIA 6

MAY, 1947

XUM

COMMITTEE ON PUBLICATIONS

JACOB R. SCHRAMM, *Chairman*

WILLIAM B. DINSMOOR
LUTHER P. EISENHART
HENRY C. LANCASTER
WILLIAM E. LINGELBACH
ARTHUR D. NOCK
ERNEST M. PATTERSON
ADOLPH H. SCHULTZ
ROBERT L. SCHUYLER
GEORGE G. SIMPSON
HUGH S. TAYLOR

LUTHER P. EISENHART, *Editor*

LANCASTER PRESS, INC., LANCASTER, PA.

THE FOOD STAMP PLAN

JOSEPH D. COPPOCK

CONTENTS

	PAGE
I. Introduction	132
Emergence of the Food Stamp Plan	133
Food stamps a type of Special Purpose Money	134
II. Nature of a special purpose money program (I)	135
Selection of Special Commodities (blue stamp foods)	135
Determining eligibility rules for participation	138
Certifying families as eligible	140
Determining Special Purpose Money (blue stamp) grants	140
III. Nature of a special purpose money program (II)	145
Determining "Frozen Money" (orange stamp) purchase requirements	145
Devising issuance, expenditure, and redemption procedures	151
Preventing reduction of eligibles' incomes	152
Securing participation by eligibles	154
IV. Effects of a special purpose money program	155
Illustration showing effects	155
Primary effectiveness	158
Secondary effectiveness	158
Aggregate effectiveness	161
Changes in outlays on substitute, complementary, and independent commodities	161
Revenues of sellers	161
Price effects	163
Physical output effects	164
Effects on money income of consumer income-groups	164
Effects on well-being of consumer income-groups	166
Effects on operation of economy	167
Conclusions regarding effects	168
Note on long-run effects of program on production	169
V. Effects of the food stamp plan	170
Primary effectiveness	170
Factors affecting primary effectiveness	171
Secondary effectiveness	172
Aggregate effectiveness	172
Changes in outlays on substitute, complementary, and independent commodities	172
Effects on aggregate sales, price, and quantity of food sold	172
Effects on distribution of income among consumers	176
Effects on well-being of participants and others	177
Effects on operation of economy	177
VI. Potentialities of special purpose money and future of the food stamp plan	177
Several kinds of Special Purpose Money	177
Special Purpose Money for selected producers	179
Special Purpose Money to foster enlarged international trade	182
Improvement of the Food Stamp Plan for future use	184
Conclusion	186
Appendix	
A. Effect of variations in freezing requirement on effectiveness, participation, and cost of program	187
B. Indifference curve analysis applied to the food stamp plan	192
C. Special purpose money as ration money	197
Index	200

TABLES

	PAGE
1. Blue stamp foods—Commodities on the blue stamp list May 1939–February 1943	137
2. Illustrative minimum required orange stamp purchases and minimum blue stamp grants, by family income and family size	141
3. Illustrative required orange stamp purchases and blue stamp grants (on a variable ratio basis), by family income and family size	143
4. Average monthly incomes of eligible cases, average monthly blue stamp grants per participant case and person, and average number of persons per participant case, during a typical period in 1941–1942, by region of country	145
5. Effects of a special purpose money program on value, price, and quantity sold, for various types of commodities and for participants, non-participants, and both groups combined	156
6. Effects of a special purpose money program on the gross revenues of industries directly and indirectly engaged in production of consumer commodities	164
7. Consumer income, consumer outlays, and consumer investments, without and with the special purpose money program, and taxes or subsidies, by income-size groups of consumers	165
8. Estimated effect of food stamp plan on aggregate value, price, and quantity of food sold at retail in 1941, for both participants, non-participants, and both groups combined	175
9. Influence of orange stamp purchase (frozen money) requirement on aggregate cost, effectiveness, and participation with one-two blue-orange ratio	188
10. Influence of orange stamp purchase requirement on aggregate cost, effectiveness, and participation with variable blue-orange ratio	190

CHARTS

1. Illustrative minimum required orange stamp purchases, maximum permissible orange stamp purchases, and minimum and maximum blue stamp grants, by family income, for 4-person and 5-person families	142
2. Illustrative orange stamp purchase requirements and blue stamp grants (on a variable ratio basis) by family income, for 4-person and 5-person families	144
3. Effects of a Special Purpose Money program on price, demand, and supply of Special Commodities, substitute commodities, complementary commodities, and independent commodities, for participants, non-participants, and both groups combined	157
4. Effects of a Special Purpose Money program on the price of Special Commodities and the quantity of Special Commodities bought by participants and non-participants: with a moderately elastic supply curve (fig. 1), with a perfectly inelastic supply curve (fig. 2), and with a perfectly elastic supply curve (fig. 3)	160
5. Effects of a Special Purpose Money subsidy on price, demand, and supply of Special Commodities, substitute commodities, complementary commodities, and independent commodities, for individual sellers and all buyers and sellers	162

XUM

6. Effects of Special Purpose Money program on distribution of income among consumer income receivers... 166
7. Lorenz curves showing the effect of the Special Purpose Money program on the distribution of income among consumer units..... 167
8. Effects of the Food Stamp Plan on price of food, quantity of food sold, and gross revenues of retail sellers of food in 1941, for (1) participants, (2) non-participants, and (3) all final consumers combined.. 174
9. Effect of a cotton subsidy on a mattress producer's marginal cost curve and output, with normal cotton purchases maintained..... 180
10. Effect of a cotton subsidy on a mattress producer's marginal cost curve and output, with and without a freezing requirement..... 180
11. Influence of orange stamp purchase requirement on aggregate cost, effectiveness, and participation—1–2 blue-orange ratio..... 189
12. Influence of orange stamp purchase requirement on aggregate cost, effectiveness, and participation—variable ratio..... 191
13. Indifference-curve analysis of effects of stamp plan on an individual participant..... 192

I. INTRODUCTION

Prominent among the economic problems of recent decades has been that of surplus commodities—commodities in distinctly greater supply than can be sold at prices sellers consider satisfactory. Holders and producers of these commodities have frequently comcomplained of glutted markets and falling prices.

During the recent war there were no surplus commodities of consequence. Nearly all goods were under price control and many were rationed to producers and final consumers. The extreme shortages necessitating price control and rationing will be overcome fairly promptly in fields other than construction. And in due time surpluses are certain to appear in some lines. Some surpluses will derive from stocks left over from the war, others from current production not geared closely enough to current demand.

What is to be done with these forthcoming surpluses? How dispose of them? Should "economic nature" be permitted to take her course or should the government attempt to soften the impact of these commodities on their markets? If the government should do something to soften the impact, what should it do? Should it buy the surplus commodities, materials, and equipment and then destroy them? Should it buy them and then hold them off the market for a few months or years, or indefinitely? Should it require that current production be slowed down or stopped while the surpluses are liquidated? Should it finance a program to give them away or sell them at nominal prices to selected purchasers? If so, who should receive them—Americans or foreigners, producers or consumers, public bodies or private persons? These are the main alternatives available to the government.

Letting "economic nature" take her course would presumably mean that the government would quickly sell its holdings of goods not needed in its ordinary operations to the highest bidders and not undertake to compensate private holders and producers on a large scale by buying and stockpiling beyond its operating or strategic needs. Many persons and groups demand the removal of government control over business in general, but few advocate such an abrupt withdrawal in their particular lines if the result is the dumping of large stocks on the market and the sudden stopping of government orders. Such a rigorous solution tends to cause some shut-downs, some bankruptcies, and some unemployment, but it puts the surplus goods in the hands of people who want them quickly, without excessive red-tape, and without additional government outlays—although possibly with lower financial returns to the government on the particular goods than delayed sales yield. With minor exceptions, business, labor, and agriculture reject this solution of the surplus problem as too rapid and too drastic.

Rejection of this "natural economic" solution implies some explicit control, mainly governmental. Destruction of surpluses appeals to suppliers of particular items because it improves the future market prospects, but it is disquieting to many people who are well aware of the potential uses of the goods that are being destroyed. Advocates of destruction usually want the government to buy the commodities from them first, if it has not already done so, before destruction is undertaken. Outright destruction will probably not bulk large as a solution because it constitutes such conspicuous waste at a time when needs and wants at home and abroad are great.

Stockpiling, although of strategic importance for some materials, especially those coming mainly from abroad, and of economic usefulness in a few cases to regulate seasonal flows, only postpones the day of reckoning so far as major surpluses are concerned.

Restriction of production under private or governmental controls to keep prices up while surpluses are liquidated and to prevent future surpluses has a fairly wide appeal. It gives producers in each field a chance to "cooperate" to hold prices up and production down. It enables the government to recover more of its investment than is likely with rushed sales and thus to show a good financial record. It substitutes curtailment of current production for destruction of past production and thus encounters less social disapproval. Of course, restriction tends to reduce employment and the buying power derived therefrom as well as to reduce the volume of producer and consumer goods. Nevertheless, this approach will receive wide support. The Agricultural Adjustment Administration has schooled not only farmers but the whole population in the techniques of production restriction and price support since 1933. Intergovernmental commodity agreements lend the flavor of international cooperation to this approach. Pri-

vate monopolies, although of longer standing, have not been quite so conspicuous or comprehensive in the use of pegged prices and curtailed production. The results are substantially the same, however, whether the control is private or public.

The remaining main alternative is to give away the surpluses. Recipients may be foreign or domestic, consumer or producer, private or public bodies. Private firms cannot be expected to give away much, so gifts involve financial costs to the federal government. It seems safe to assert that foreign countries are willing to take anything and everything we are disposed to give away. Most of them, especially in the Old World, have ample absorptive capacity for any of our free excess goods. Most are very short of dollars with which to buy our goods and are likely to remain so until their production is expanded and we are geared to receive large imports.

Domestically the problem is somewhat different. Public or quasi-public bodies—state and local governments, schools and colleges, hospitals, etc.—can make good use of some surplus goods and equipment. Gifts to producers raise many difficult questions because of the effect of gifts on competition among the producers. There tend to be claims that monopolies are being created on the one hand, and that new and "unfair" competition is being developed on the other. Similar problems arise if goods are loaned or leased to business firms, and some sales to business firms appear to be gifts whether they actually are or not. In general the business community, as well as others, oppose outright gifts to producers, except for small aids to veterans. Opposition is voiced by American business men against gifts of equipment and materials to foreign producers, directly or indirectly, because of the tendency of such gifts to develop foreign competition, although these views are modified at times by considerations of national policy. Criticism is likewise leveled against foreign loans.

This leaves to be considered domestic consumers as possible recipients of surplus goods from the federal government. Many of the articles the government has on hand as a result of the war and its price support programs are not usable by final consumers, so the solution for such surpluses must be found among the preceding alternatives. However, for goods usable by final consumers, such consumers provide a plausible and generally acceptable surplus disposal outlet. Final consumers can generally use many more goods than they now have, so the acquisition of some free goods does not seriously impair the future market for these or other goods. For practical purposes, consumers' wants are insatiable, although a short-term surfeit of particular items can occur for a small segment of the population. Surpluses of food, clothing, and miscellaneous personal and household equipment can well be given to domestic final consumers, especially those in the lower-income brackets, without seriously disrupting present or future demand.

It so happens that the United States has had recent and successful experience in distributing surplus commodities to low-income final consumers. The surplus disposal programs of the Department of Agriculture, especially the Food Stamp Plan, have been found workable mechanisms for accomplishing this task.

This study is devoted to a discussion of the technique of surplus removal embodied in the Food Stamp Plan.

EMERGENCE OF THE FOOD STAMP PLAN

In 1933, in the depths of economic depression, the Federal Surplus Relief Corporation, superseded in 1935 by the Federal Surplus Commodities Corporation, began the purchase and distribution of agricultural products with the two-fold object of raising the cash incomes of food producers and providing needy persons with more food. These products were distributed through state and local relief agencies. Schools and other institutions also received food under this arrangement.

By 1938 it had become apparent that these operations were putting the United States Government, through the Federal Surplus Commodities Corporation, into the food distribution business on a large scale. The Corporation handled the purchase of the food, its transportation, storage, and distribution to local depots, and supervised its final disposal by the state and local relief agencies. This machinery partly duplicated that of the private wholesale and retail food industry and many wholesale and retail food dealers denounced it as government competition. The agency's acquisition and disposal procedures were widely criticized, even by some generally in favor of transfer of surpluses to the needy.

Given the political decision, as expressed in the Agricultural Adjustment Act, to use federal subsidy to provide farmers with more cash and low-income families with more food, some method was needed for distributing surplus commodities through regular business channels. To be successful, such a scheme would have to be at least as efficient as the direct distribution system in putting additional cash in the hands of the farmers and additional food in the stomachs of the needy.

The Food Stamp Plan, worked out in 1938–1939 by the Department of Agriculture, provided the answer. It was a striking combination of theoretical ingenuity and practical sense. The main features of the Plan were as follows. Eligible families in selected areas, usually those receiving public assistance, could buy orange food stamps to the approximate amount of their normal food purchases and then receive free blue stamps, usually at the ratio of one blue to two orange stamps. The orange stamps could be exchanged for any food items, but the blue stamps for only those foods named on the official monthly list

XUM

of surplus commodities. Both kinds of stamps were issued in just the twenty-five cent denomination. Participants had to spend their stamps with retail food dealers. Local food industry committees helped acquaint grocers and related tradesmen with the practical operating details of the Plan. Food dealers redeemed the stamps into cash at par through their wholesalers or banks. State or local governments provided revolving funds for purchasing and holding the orange stamps until they were sold to participants, pledged themselves not to lower their own relief contributions, certified households as to eligibility, and furnished the detailed administration of the program.

Ideally, the entire subsidy would go, in the form of increased receipts, to farmers, processors, and distributors. These groups would tend to receive from these additional consumer outlays their customary shares of the consumer's food dollar. If the increased demand caused food prices to rise, sellers of food could probably expect even additional revenues from their sales to the non-participating population.

The Plan was administered by agencies of the Department of Agriculture: the Federal Surplus Commodities Corporation from May 1939 until mid-1940, the Surplus Marketing Administration until the end of 1941, and then the Agricultural Marketing Administration until March 1943 when the Stamp Plan was discontinued. We shall refer here, for convenience, only to the Surplus Marketing Administration ("SMA"), since it operated the Stamp Plan during most of its existence.

The Food Stamp Plan was introduced first in Rochester, New York, in May 1939. Between then and March 1943 it was put into operation in nearly half the approximately 3,000 counties in the country. These counties contained almost two-thirds of the population of the United States, according to the 1940 census. The direct distribution system remained in effect in the rest of the country, and it was used everywhere for such institutional assistance projects as the school lunch program. For the nearly four years that the program was in operation Stamp Plan outlays aggregated $261,000,000. SMA administrative expenses consumed about three per cent of this amount, although it should be noted that welfare agencies did much of the necessary administrative work.

Inauguration of the Food Stamp Plan in 1939 did not require a new organization since the Federal Surplus Commodities Corporation was already a going concern, but it did require some expansion of the Corporation's staff. However, there were never more than 1,000 federal employees—administrative, professional, clerical—engaged in Stamp Plan operations in the entire country. By 1941 the Surplus Marketing Administration handled, in addition to the Food Stamp Plan, the direct distribution program in areas where the Stamp Plan was not in operation, a small cotton stamp plan, a school lunch program and a penny milk program for school children, a low-cost milk program for relief clients and, in cooperation with the Agricultural Adjustment Administration, the supplementary cotton stamp program by which cotton producers were paid for diversifying their production.

Decentralization of the administration of the program was extreme. The chief officers, for most of the period, were the Surplus Marketing Administrator and four regional directors. Below the regional level were district, state, and local area offices, although this hierarchy was not uniform throughout the country. The regional directors had considerable discretion in the formulation of policy and the administration of the program. In many situations a large measure of authority was exercised even below the regional level. The result was an easy adaptation to local conditions. The functions of the personnel in the Washington and regional offices were highly specialized, while on the district, state, and local area levels each SMA representative had to deal with the whole gamut of problems.

The Stamp Plan quickly gained enthusiastic support among all sections of the population. Polls, convention resolutions, editorials, and private expressions of opinon testified to its successful reception. It was one of the most popular programs of the late New Deal period. The use of stamps as "special purpose money" appealed to money cranks and other persons interested in monetary solutions of our economic problems. To others, primarily concerned with the relief of the hungry, the Plan appeared to be more of a special poor-relief program than a farm-aid program, as compared with the direct distribution system, although both aspects were involved. To farm groups it appeared a highly conscionable political device for raising farm income or justifying other governmental efforts to that end. Retailers and wholesalers welcomed the prospect of added revenues, and applauded the program's dependence on the ordinary channels of trade.

FOOD STAMPS A TYPE OF SPECIAL PURPOSE MONEY

The key instrument by which the Food Stamp Plan operated was the food stamp. This stamp constituted a species of Special Purpose Money, i.e., money which can be spent only in accordance with certain rules. Special Purpose Money differs from ordinary money in that it may be used only by specified persons and/or in specified transactions, whereas ordinary money may be used by anyone and in any transaction within the country of issue.

One may distinguish between two types of Special Purpose Money, "expansion" and "contraction" Special Purpose Money. Expansion (or supplemental) Special Purpose Money can help expand the consumption of designated Special Commodities; con-

traction Special Purpose Money (ration money) can help contract the movement of designated Special Commodities. Food stamps were expansion Special Purpose Money: they could be used only by eligible persons to purchase only the designated Special Commodities, but the Special Commodities could of course be bought with ordinary money as well. Contraction Special Purpose Money, or ration money, on the other hand, would be the only currency by which rationed commodities could be obtained legally. Ration money is mentioned here and considered (in appendix C) only to make clear its family relationship to supplemental Special Purpose Money.

A particular Special Purpose Money program of the supplemental type will always have certain other broad identifying characteristics. It will be: (1) for one kind or for several kinds of commodities, (2) for selected consumers or for selected producers as immediate beneficiaries, and (3) domestic or international. The main body of this work, chapters II through V, is devoted to a summary description and generalization of the nature and effects of the Food Stamp Plan, which was a *supplemental* Special Purpose Money program for providing *domestic final consumers*, as immediate beneficiaries, with additional commodities of *one kind*. The final chapter (VI) is concerned with the potentialities of expansion Special Purpose Money. It describes illustrative programs involving several kinds of commodities for domestic consumers, one kind of commodity for domestic producers, and two kinds of commodities for consumers in two countries. Suggestions are also made for improving the Food Stamp Plan of 1939–1943.

II. NATURE OF A SPECIAL PURPOSE MONEY PROGRAM (I)

In undertaking the analysis of a supplementary Special Purpose Money program it is important to make explicit the dominant aim of the program since the techniques employed depend somewhat upon the exact aim. We shall, except when otherwise stated, understand the primary objective to be the bringing about of the maximum increase in expenditures on Special Commodities by the participants from a given volume of subsidy funds. Pursuit of this aim is the best way to foster the maximum increase in both the sellers' sales of Special Commodities, which include sales to non-participants as well as participants, and the participants' consumption of Special Commodities.

This goal was dominant in the administration of the Food Stamp Plan of 1939–1943, although it was not always made entirely clear. No act of Congress or administrative statement set forth explicitly the purposes of the Plan.[1]

[1] The legal authority was provided in Section 32, Public Law No. 320, 74th Congress, approved August 24, 1935, the relevant part of which reads as follows: "There is hereby appropriated for each fiscal year beginning with the fiscal year ending June 30, 1936 an amount equal to 30 per centum of the gross receipts from duties collected under the customs laws during the period January 1 to December 31, both inclusive, preceding the beginning of each such fiscal year. Such sums shall be maintained in a separate fund and shall be used by the Secretary of Agriculture only to (1) encourage the exportation of agricultural commodities and products thereof by the payment of benefits . . . ; (2) *encourage the domestic consumption of such commodities or products by diverting them, by the payment of benefits or indemnities or by other means, from the normal channels of trade and commerce;* and (3) finance adjustments in the quantity planted or produced for market of agriculatural commodities."

The italicized part above provided the principal legal basis for the Food Stamp Plan, although Public Law No. 165, approved June 28, 1937, adds some further authority. For an extensive discussion of the legal and administrative problems, see Samuel Herman, The Food Stamp Plan: A Study in Law and Economics, *Journal of Business of the University of Chicago* **13** (4) Oct., 1940 and **14** (1), Jan., 1941. See also the same periodical, **13** (3), July, 1943, for Mr. Herman's discussion of the political aspects of the Stamp Plan.

For another general discussion of a rather technical character, written during the preliminary and early stages of the Stamp Plan, see Norman Leon Gold, A. C. Hoffman, and Frederick V. Waugh, *Economic Analysis of the Food Stamp Plan*, Government Printing Office, 1940.

The framers and administrators of a Special Purpose Money program have to solve, in one way or another, a number of specific problems if the program is to be effective. Naturally, the originators and operators of the Food Stamp Plan had to solve these problems too. The principal problems are:

Selecting Special Commodities (blue stamp foods)
Determining eligibility rules for participation
Certifying families as eligible
Determining Special Purpose Money (blue stamp) grants
Determining "Frozen Money" (orange stamp) purchase requirements
Devising issuance, expenditure, and redemption procedures
Preventing reduction of eligibles' incomes
Securing participation by eligibles

The broad outlines of the solutions to these problems, as distilled from the experience of the Food Stamp Plan and as actually worked out by the Surplus Marketing Administration, are set forth here. Each section of this and the next chapter contains first a generalized discussion of the topic and second a summary description of how the particular problem was handled under the Stamp Plan. The actual procedures and processes described in the factual portions of these chapters reflect the practice of early 1942, by which time the Stamp Plan techniques had become quite stabilized.

SELECTION OF SPECIAL COMMODITIES (BLUE STAMP FOODS)

The commodities designated as Special Commodities—those for which participating eligibles may spend their Special Purpose Money—will tend to vary according to which of two main underlying purposes is

paramount. If, on the one hand, the purpose is to enable people who cannot afford to buy these commodities to buy them, commodities will be selected in the light of the unfulfilled consumption desires and/or needs of the eligible persons. For example, if it is fairly certain that eligibles want more peanuts and need them from a nutritional point of view, peanuts might well be designated a Special Commodity. But if, on the other hand, the main purpose is to provide more business for peanut merchants and producers, peanuts might be selected because peanut prices or the incomes of peanut suppliers are "too low."

These alternative underlying purposes may seem conflicting, but they are only partially so, for an increased demand for any commodity tends to improve the income situation of the sellers of it, and an increased supply of any commodity tends to make consumers of it better off. Of course, the increased demand tends to make non-subsidized demanders worse off, as evidenced by increased prices and/or additional taxes. However, if the main purpose is to assist suppliers of commodities for which subsidized consumers would be willing to spend only a small portion of their subsidy grants, there may be said to be competition over these funds between the Special Commodity producers and the subsidized consumers, for the latter will attempt to contrive ways of spending the subsidy for other things than additional Special Commodities. Conversely, if the commodities to be designated are in great demand by eligibles but are restricted as to supply, a different conflict of interest exists. It is between non-subsidized buyers on the one hand and the subsidized buyers on the other, since the increased demand pushes up the price of the approximately fixed supply and diverts part of it from the non-participants to the participants in the Special Purpose Money program.

The following rules-of-thumb might well guide the selection of Special Commodities, although not all of these tests could always be met in a concrete situation. Special Commodities should be those for which eligibles have a substantial potential demand and a recognized need; their supply should be quite expansible; prices of Special Commodities and/or the incomes of many of their suppliers should be "low"; the number of Special Commodities should be few enough, as measured by eligibles' normal expenditures on this list of commodities as compared with the subsidy grant, to require participants to increase substantially their purchases of Special Commodities. Also, Special Commodities should be those the enlarged production and distribution of which will be approved by the general public as well as by the groups directly affected by the subsidy.

The Surplus Marketing Administration never did announce its method of selecting the list of blue stamp foods "surplus commodities." The broad policy was to choose foods having prices farthest below "parity," but this policy was not followed rigidly.

Although the concepts of parity and surplus are not fundamental to the Food Stamp Plan, it is well to explain them because they have been used so frequently in discussions of nearly all agricultural problems in recent years. Parity is a flexible concept employed to justify programs for raising prices of farm products and/or incomes of farmers. The most common formulation has been that farm products, individually or in the aggregate, should command in exchange as much of the things farmers buy as they did in a base period, usually 1909–1914. Since the quality, type, and relative importance of goods change considerably over a period of time, parity is not a precise notion. Parity is the same as par "terms of trade" between two sectors of the economy or two countries. It is essentially a just-price concept.

If particular farm product prices (or farm incomes) are below this parity level, the products in question are said to be surplus. The implication is that if the quantity offered for sale were reduced, the total revenues would increase as prices rose. If true—that a smaller supply would yield larger revenues—the difference between this quantity and the actual supply is surplus, from the sellers' point of view. However, from the point of view of buyers of a commodity, there is no surplus as long as a price above zero is needed to restrict the demand to the available supply.

The accompanying table (table 1) shows the monthly blue stamp food lists for the entire period of operation of the Stamp Plan. Twenty different commodities were on the blue stamp list at one time or another during the forty-six months of the Stamp Plan's existence, but no more than eighteen were listed in any one month. This maximum was reached and maintained for the five months from November 1940 through March 1941. The smallest number listed was eight: at the beginning, May and June 1939, and toward the end, October and November 1942. The typical number of blue stamp commodities on the monthly list was fourteen. There was no discernible seasonal change in the number of commodities listed.

Three of the twenty commodities—dry beans, flour, and corn meal—were on the list all forty-six months. At the other extreme, four foods were listed less than twenty times: plums (6), peaches (11), dry onions (15), and rice (19). On the average, a particular commodity was on the list thirty-one times, that is, two-thirds of the time the Plan was in operation. Some fruits were included during certain seasons only: grapefruit in the winter and spring, apples in the late spring, pears in the summer, and peaches in all seasons except the summer. The list was rather sharply

TABLE 1

BLUE STAMP FOODS

Commodities on the Blue Stamp List May 1939–February 1943

Commodity	1939								1940												1941												1942												1943		T[b]
	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	
Butter	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x						x	x	x	x	x	x	x	x									35
Eggs	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	44
Pork								x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x				x	x	x	x	x												27
Lard						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x																					22
Oranges	x	x						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x				35
Grapefruit	x	x						x	x	x	x	x	x						x	x	x	x	x	x	x	x	x					x	x	x	x	x	x	x						x	x	26
Apples						x	x	x	x	x	x	x	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	37
Pears				x	x	x	x	x	x	x	x	x	x			x	x	x	x	x	x	x	x					x	x	x	x	x	x	x	x	x	x			x	x				x	x	32
Plums																												x	x	x							x		x	x							6
Peaches			x	x	x										x	x	x										x	x	x								x	x									11
Raisins						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x											27
Dry prunes	x	x	x	x	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			x									34
Dry beans	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	46
Dry onions			x	x	x	x	x	x	x	x	x								x	x	x	x	x	x	x																						15
Potatoes																		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	26
Fresh veg.[a]			x	x	x	x	x	x						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	39
Flour	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	46
Rice			x	x	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x																								19
Corn meal	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	46
Hominy grits								x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	39
Mo. totals	8	8	10	11	11	11	11	17	16	16	16	15	15	13	14	16	16	16	18	18	18	18	18	16	15	14	13	14	14	13	14	15	14	14	14	12	13	10	12	13	9	8	8	9	9	9	

[a] From June 1940 to August 1941, individual fresh vegetables were listed for particular areas and for stated time periods. Beginning August 1941 all fresh vegetables were listed as a group. Vegetable shortening was on the list in four areas in the Southern Region, February through July 1941.

[b] "T": total number of months listed.

curtailed by the summer of 1941 when surpluses became less evident. Butter was removed for several months, while lard, dry onions, and rice were dropped permanently. Except for the dropping of raisins, the beginning of the war in December 1941 did not bring about any change in the schedule for many months, but the last six months of the Plan—September 1942 through February 1943—saw only a few commodities left on the monthly list.

The ranking of the blue stamp foods according to the number of months they were listed is as follows (from the right-hand column of table 1):

1. Dry beans (46)
2. Flour (46)
3. Corn meal (46)
4. Eggs (44)
5. Fresh vegetables (39)
6. Hominy grits (39)
7. Apples (37)
8. Butter (35)
9. Oranges (35)
10. Dry prunes (34)
11. Pears (32)
12. Pork (27)
13. Raisins (27)
14. Grapefruit (26)
15. Potatoes (26)
16. Lard (22)
17. Rice (19)
18. Dry onions (15)
19. Peaches (11)
20. Plums (6)

Various political and producer influences undoubtedly affected the composition of the list of blue stamp foods, but these influences cannot be readily discovered by a direct examination of the monthly lists. Congressmen, producer associations, and persons in the Department of Agriculture having particular commodity interests could be expected to encourage the placing of certain commodities on the list. As the Stamp Plan came to be more widely used as a supplementary assistance program and as the agricultural situation improved generally between 1939 and 1943, emphasis in the selection of the blue stamp foods seemed to shift toward consumer-nutritional and away from producer considerations. Occasional analyses of the list were made by the SMA to see if participants could, with their orange stamps plus their free blue stamps, purchase nutritionally satisfactory diets. One such investigation led to the widening of the list to include certain highly nutritious foods.

Reference to the rules-of-thumb suggested above, in the light of the facts available, indicates that blue stamp food lists were fairly well-chosen. Probably the principal weakness, from the point of view of pushing the sales of blue stamp foods, was the breadth of the list in relation to the size of the individual subsidy grant. Participants would normally have spread their expenditures over many of the listed commodities; a much shorter list would have tended to bring greater sales of the commodities listed.

DETERMINING ELIGIBILITY RULES FOR PARTICIPATION

Who should receive the subsidy grants under a Special Purpose Money program? It would appear that eligibles should ordinarily be those persons who are, first, financially unable, all things considered, to acquire Special Commodities in satisfactory quantities and, second, want and need these commodities. In other words, the two suggested tests of eligibility are financial incapacity and lack of Special Commodities.

Let us first consider financial incapacity, or more generally, poverty. Two or three alternative operational definitions of poverty present themselves. Poor families (as consumer units) might be considered to be those below a certain rank in the income scale, for example the one-third of the families receiving the lowest incomes. Again, poor families might be considered those whose incomes are below the cost of some minimum decency standard of living, as defined by a reliable welfare or government agency. Or again, poor people might be considered those already receiving some form of welfare assistance or relief which means acceptance of earlier judgments with reference to either or both of the other tests of poverty. These definitions of poverty overlap to a certain extent, but by one of them, or a combination of them, the needy can be identified for the purposes of a Special Purpose Money program.

Poverty depends upon two factors, economic power and burdens, or drains, on this economic power. Economic power for the groups likely to be eligible for a Special Purpose Money subsidy is represented quite adequately by income, in cash and in kind, since they own very little property. Income should ordinarily be calculated as net income i.e., gross income less certain rather arbitarary allowances for expenses incurred in obtaining the gross income.

The best crude measure of burden on a family is probably the number of persons in the family, although accuracy calls for modifications of this measure, e.g., composition of the family with reference to age, sex, health, etc. Family should be interpreted as the single household group in some meaningful sense, such as the number of persons ordinarily eating at the table, sleeping in the house, or for whom the head is financially responsible. Although more refined measures of burden are undoubtedly desirable for some purposes, family size may be taken to represent the burden factor in determining poverty for the purposes of this study.

Let us now indicate more precisely the meaning of the other determinant of eligibility, lack of Special Commodities. This shortage may exist with reference to eligibles' needs or their desires. Needs may be defined as what other people, presumably compe-

tent to judge, think you should have; desires what you, competent or not to judge, wish to have. Needs and desires, so defined, do not always coincide. In administering a broad subsidy program of this type the desires or wants of the eligibles, as distinguished from their needs, cannot be neatly accommodated. Owing to the difficulty of knowing desires or wants, we shall ordinarily speak of needs of eligibles—needs as determined with reference to some explicit adequacy standard—instead of desires of eligibles when considering the lack of Special Commodities. Needs are sometimes thought of as total requirements of a particular item and sometimes as deficiencies with reference to these requirements. The latter definition is preferable for present purposes: needs are here taken to mean the extent to which actual consumption of Special Commodities falls short of an adequacy standard for the various sizes of families. Needs or deficiencies of families for particular consumption goods or services vary according to size of family, composition of family, location, national origin, and other characteristics.

To sum up this discussion, eligible families should be poor and in need of Special Commodities, In some instances poverty would be the only index of need of Special Commodities, but in others it would be possible to separate out the classes of poor not in need of Special Commodities and declare them ineligible.

The preceding paragraphs imply that a Special Purpose Money plan would reach the needy families, or as many as available funds would permit, in all parts of the country. In practice, however, administrative and perhaps political considerations would tend to confine the program to certain areas, at least during the initial stages. The problems of geographic coverage are brought out later in this section in connection with the Stamp Plan.

Under the Stamp Plan eligibles were families with low incomes in designated areas of the country. This usually meant families receiving, or eligible to receive, some form of public assistance, although some non-relief low-income families were eligible. The principal classes of eligibles and the percentage distribution of persons among these classes were as follows in March 1942:

Social Security Groups	Percentage
Old Age Assistance	17
Aid to Dependent Children	14
Aid to the Blind	1
Other Federal Groups	
Work Projects Administration	23
Miscellaneous Federal	1
Non-Federal Groups	
General Relief (State, Local)	26
Non-assistance	18
All Groups (5,462,000 persons)	100

Eligibles were expected to be householders in order that they themselves would be equipped to use the unprepared foods. The family, not the individual, was the unit certified.

In a few places some public assistance cases were excluded from eligibility because they received incomes in excess of the "income ceilings" or "upper exclusion points" approved by SMA. In other instances, as observed above, families not receiving public assistance but having incomes below the ceilings were declared eligible. The ceilings varied by size of family: according to a 1942 statement, they were $40 per month for one-person families, $60 for two, $80 for three, $100 for four, $120 for five, $140 for six, and $150 for larger families. Income ceilings were not uniform throughout the country and were changed rather frequently. In a few places families below these ceilings were excluded from eligibility because they were presumed to be spending enough money on food already to obtain an adequate diet. This more rigorous principle for setting upper exclusion points stemmed from the strict interpretation of the stated purpose of the Stamp Plan to raise living levels only with respect to food, but it was used only experimentally.

Although it may seem anomalous, the SMA found it necessary to set lower exclusion points or "income floors." This was done in order to encourage maintenance of relief standards. Families that did not receive a certain minimum income (varying from $20 to $50 per month with size of family) were certified at this minimum income level, not at their actual incomes. However discriminatory, this was necessary to insure the maintenance of relief payments in some areas, and thus to keep the Stamp Plan an assistance program for the food producers and relief clients rather than for the local taxpayers. In some areas the SMA even required an improvement in relief standards prior to installation of the program.

By early 1942 the Food Stamp Plan was operating in local areas containing 60 per cent of the population of the United States. Specifically, it was functioning in every major city;[2] in eighty-one of the ninety-three cities of one hundred thousand or more population;[3] in nearly fifteen hundred of the approximately three thousand counties of the country; in every state except West Virginia.[4] Coverage was state-wide west of the

[2] Seven cities received more than 1 per cent of the total national stamp subsidy in early 1942; New York City, 14.4; Chicago, 3.3; Los Angeles, 2.2; Pittsburgh (area), 1.4; Minneapolis (proper), 1.3; Boston, 1.1; Cleveland, 1.1.

[3] Those not having the plan were: Bridgeport, Connecticut; Washington, D. C.; Gary, Indiana; Cambridge, Massachusetts; Worcester, Massachusetts; Elizabeth, New Jersey; Patterson, New Jersey; Trenton, New Jersey; Albany, New York; Syracuse, New York; Reading, Pennsylvania; San Antonio, Texas.

[4] A peculiarity of the West Virginia sales tax legislation, which the legislature did not see fit to remedy, would not permit exemption of blue stamp sales from the tax; such exemption was a requirement of SMA. West Virginia received rather extensive direct assistance.

XUM

Rocky Mountains. The areas served by the Stamp Plan were probably more needy on the average than those not served, but Stamp Plan areas were not selected in accordance with any overall policy of reaching the most destitute families or the places with the relatively largest relief loads. The first six experimental cities were selected primarily because of their moderate size, geographic location, and the prospect of cooperation on the part of the local communities. These cities and the opening dates were: Rochester, New York, in May 1939; Dayton, Ohio, in June 1939; Seattle, Washington, in July 1939; Birmingham, Alabama, in July 1939; Shawnee, Oklahoma, in August 1939; and Des Moines, Iowa, in August 1939. The administrators of the Stamp Plan avoided large cities until February 1940, when Los Angeles was opened, but by the end of 1940 the other four cities of more than one million population (New York, Chicago, Philadelphia, and Detroit) had the program.

The SMA attempted to secure a wide geographic coverage although the coverage was not uniform. The order in which areas were designated depended upon a variety of factors, such as the following: the initiative of the local chambers of commerce, relief administrators, or retail food industries; the pressure brought to bear by Congressmen and other political interests; the readiness with which areas could meet the requirements of the SMA, particularly with respect to the revolving fund needed to acquire and hold the orange stamps until they were sold to the participants. Not all state and local governments, or relief administrations, sought to have the Stamp Plan introduced. Where the direct distribution system of federal aid—which required very small local contributions—was in effect on a sizable scale, the Stamp Plan provided no financial inducements. This was particularly true in places where the revolving fund would have to be fairly large and where increased relief expenditures would have to be made to maintain minimum relief standards acceptable to the SMA. Consequently, the initiative in introducing the Stamp Plan was frequently furnished by the SMA in the interest of the movement of a larger volume of food products from farms into the hands of the needy.

CERTIFYING FAMILIES AS ELIGIBLE

Once eligibility rules have been determined, the administrators of a Special Purpose Money program must develop procedures for actually certifying eligibles for participation. Certification means registering families which qualify under the eligibility rules, obtaining certain information from them, and securing their commitment to abide by the prescribed purchase and spending rules. Participation by eligibles should be voluntary. Since the subsidy constitutes an outright donation to the recipients, it would seem superfluous to require participation. Moreover, compliance with the expenditure rules depends to some extent on voluntary acceptance by participants of the limitations imposed on their spending inclinations. "Recertification" should probably be required after six months.

Since the certification task consists not only of issuing certification cards to applying eligibles but also of checking on the validity of the information furnished by the eligibles, a considerable investigatory staff may be required. Hence, the relief or welfare agencies, private or public, become distinctly useful as certifying agents.

The Surplus Marketing Administration used welfare or relief agencies as certifying agents almost entirely in administering the Food Stamp Plan. Self-certification by likely eligibles was rejected as undependable; direct SMA certification and investigation was considered too expensive. The certification work of the welfare agencies was not uniformly satisfactory; spot checks by SMA investigators occasionally revealed incorrect certifications of family size and income as well as the presence of ineligibles on the rolls. Recertification was irregular in many places. Quality of certification work was directly related to the general quality of relief administration.

In most communities possible eligibles were requested to furnish information only on family size ("table size") and relief category (the latter a rough measure of income and family composition) because these characteristics could be learned and checked readily. However, as the Plan continued, the SMA tended to use family size and family income more often because these factors seemed to be better indexes of normal food outlays and food needs than the other available characteristics of eligibles.

DETERMINING SPECIAL PURPOSE MONEY (BLUE STAMP) GRANTS

The next problem is to determine the size of the grants of Special Purpose Money to be offered to the eligible families. Since eligible families are those which are both poor and deficient in Special Commodities, according to established criteria, it appears logical to make the grants to individual families large enough to overcome these deficiencies, provided sufficient funds are available, but not larger than necessary to make up deficiencies. In case total funds available are insufficient to make up the entire deficiency of all participating eligibles, a specified percentage of the adequacy level can be used as a standard.

The central problem in determining the size of the individual grants is to make them conform to needs and at the same time avoid being at such variance with desires that participants are reluctant to spend the additional funds on additional Special Commodities. The Special Purpose Money plan seeks to have all of this increment to income spent on Special Commodities, and, although deficiencies below adequacy

levels may be made up by this technique, it must be recognized that people do not often want to spend all of an increment to income on one class of articles. Consequently, experience might show that effectiveness of the subsidy could be increased by departing to some extent from the equitable rule of making grants equal to eligibles' deficiency in Special Commodities below the adequacy level.

Let us consider briefly the question of how large the total Special Purpose Money appropriation should be. The maximum amount of funds which would be needed to pay all eligibles up to the adequacy level of consumption of Special Commodities would be the number of eligible families multiplied by the average deficiency below this level. In estimating the cost of any actual program allowance should be made for nonparticipation on the part of some eligibles. Congress cannot expect the Special Purpose Money plan to be a completely flexible device for remedying the ills of the eligibles and the suppliers of Special Commodities. In case it wishes to give some aid to eligibles, but has no special concern for suppliers, it can remedy deficiencies up to only a fractional extent of the adequacy levels with a small appropriation. But the total appropriation which would give the eligibles the adequacy levels might be insufficient to improve substantially the income situation of the suppliers. In approving such a program Congress should be careful not to nullify some of the main effects of the Special Purpose Money program by the method of raising the money. In particular, a significant portion of the funds should not be obtained from the eligibles, or the sellers (in case aid to them is considered paramount), since they would tend to be financing themselves and be little better off than before. If the funds were raised largely from taxes on the participants, the approximate effect would be to leave them in substantially the same income situation but required to expend much more on Special Commodities. If the main concern is over the changes in total receipts of sellers of Special Commodities, then the funds should come from non-eligibles who are not sellers, especially those non-eligibles least likely to cut down their purchases of Special Commodities. Since Special Commodities are almost certain to be "necessities," at least in the eyes of the non-eligibles, it follows that the subsidy

TABLE 2

ILLUSTRATIVE MINIMUM REQUIRED ORANGE STAMP PURCHASES AND MINIMUM BLUE STAMP GRANTS, BY FAMILY INCOME AND FAMILY SIZE [d]

(Dollars per family per month)

Income Class	Family size															
	1		2		3		4		5		6		7		8-over	
	O[a]	B[b]	O	B	O	B	O	B	O	B	O	B	O	B	O	B
($ per month)																
10–19	10	5											(Excluded)			
20–29	12	6	14	7	16	8	18	9								
30–39	13	6½	16	8	18	9	20	10	23	11½	25	12½				
40–49			17	8½	20	10	22	11	25	12½	27	13½	29	14½	33	16½
50–59			18	9	22	11	24	12	27	13½	29	14½	31	15½	35	17½
60–69					24	12	26	13	29	14½	31	15½	33	16½	37	18½
70–79					26	13	28	14	31	15½	33	16½	35	17½	39	19½
80–89							30	15	33	16½	35	17½	37	18½	41	20½
90–99							31	15½	35	17½	37	18½	39	19½	43	21½
100–109									36	18	39	19½	41	20½	45	22½
110–119									37	18½	41	20½	43	21½	47	23½
120–129											42	21	44	22	49	24½
130–139											43	22½	45	22½	50	25
140–149													46	23	51	25½
"Adequacy level" [c]	16		30		40		50		60		70		80		90	

[a] "O" for orange stamp purchase requirement; "B" for blue stamp grant.

[b] Blue stamps are granted at the rate of one blue for two orange stamps purchased.

[c] Cost estimates of a "liberal low-cost adequate diet," as calculated by Hazel K. Stiebeling, Bureau of Home Economics, January, 1942.

[d] Maximum permissible orange stamp purchases and corresponding blue stamp grants averaged about 50 per cent above the amounts shown in this table.

XUM

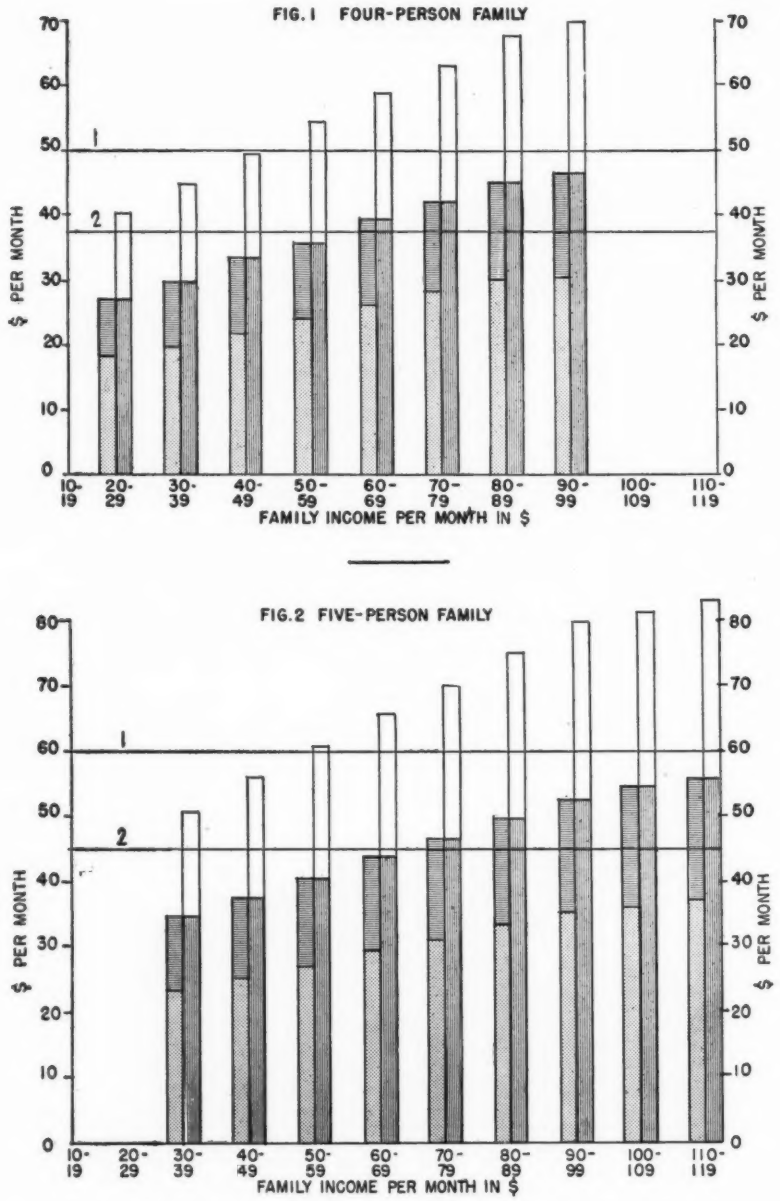


CHART 1. Illustrative minimum required orange stamp purchases, maximum permissible orange stamp purchases, and minimum and maximum blue stamp grants, by family income, for 4- and 5-person families.

funds should be raised from these persons because they will not reduce their outlays on necessities significantly as their taxes increase.

Taxes which are progressive in their incidence (that is, take larger fractions of higher incomes) and borrowings from the well-to-do sections of the population, to

be repaid later by progressive taxes, are the proper devices for obtaining this result, as contrasted to proportional and regressive taxes. The incidence of financing by means of increases in the money supply, directly or through the banks, varies with the level of employment and the strength of monopolistic influences in the economy, and is manifestly difficult to ascertain.

Under the Stamp Plan the typical blue stamp grant was one blue stamp for every two orange stamps purchased. Since orange stamp purchases, which were supposed to approximate normal food expenditures, varied by family size and income (or relief category), as well as by geographic area, participating cases received subsidies of greatly varying sizes. According to the schedule of issuance rates shown in table 2, the poorest one-person family could receive only $5–7.50 in blue stamps per month while the "richest" eight-person eligible family could receive $25.50–32.50 in blue stamps per month.

The fixed one-two blue-orange ratio provided a very crude distribution of blue stamps according to needs, as judged with reference to any given adequacy level of food expenditures for various family sizes. The blue stamp contribution increased with family size as it should, according to the criterion of making up food deficiencies, but it also increased with increases in income, which is contrary to this criterion. The result was that in any given family size the poorest families received fewer blue stamps than were needed to bring their food money (orange plus blue stamps) up to the adequacy level, while the relatively high-income families received more than enough blue stamps to bring them up to the adequacy level. See chart 1 for for a pictorialization of this "basis of issuance."

These considerations led some administrators to experiment with "variable ratios," i.e., variations of the standard one-two blue-orange ratio. For example, according to the illustrative schedule shown in table 3 and chart 2, four-person families with incomes of $40–49 per month were given $16 instead of $11 in blue stamps when they purchased $22 worth of orange stamps, and four-person families with incomes $80–89 were given $8 instead of $15 in blue stamps when they purchased $30 in orange stamps. Table 3 and chart

TABLE 3

ILLUSTRATIVE REQUIRED ORANGE STAMP PURCHASES AND BLUE STAMP GRANTS (ON A VARIABLE RATIO BASIS), BY FAMILY INCOME AND FAMILY SIZE

(Dollars per family per month)

Family Income	Family Size																Family Income
	1		2		3		4		5		6		7		8-over		
	O[a]	B[b]	O	B	O	B	O	B	O	B	O	B	O	B	O	B	
($ per month)																	($ per month)
10–19	10	4															10–19
20–29			14	9	16	14	18	20					(Excluded)				20–29
30–39			16	7	18	12	20	18	23	22	25	28					30–39
40–49			17	6	20	10	22	16	25	20	27	26	29	31	33	35	40–49
50–59			18	5	22	8	24	14	27	18	29	24	31	29	35	33	50–59
60–69			19	4	24	6	26	12	29	16	31	22	33	27	37	31	60–69
70–79					25	5	28	10	31	14	33	20	35	25	39	29	70–79
80–89					26	4	30	8	33	12	35	18	37	23	41	27	80–89
90–99							32	6	35	10	37	16	39	21	43	25	90–99
100–109							33	5	36	9	39	14	41	19	45	23	100–109
110–119	(Excluded)						34	4	37	8	41	12	43	17	47	21	110–119
120–129									38	7	42	11	44	16	49	19	120–129
130–139									39	6	43	10	45	15	50	18	130–139
140–149											44	9	46	14	51	17	140–149
150–over																	
"¾ Adequacy"	14		23		30		38		45		53		60		68		"¾ Adequacy"
"Adequacy"[c]	16		30		40		50		60		70		80		90		"Adequacy"

[a] "O" for orange stamp purchase requirement; "B" for blue stamp grant.

[b] In this example, blue stamps are granted in sufficient quantity to provide food money (orange plus blue stamps) of approximately ¾ the cost of a "liberal low-cost adequate diet." No grants below $4 would be made.

[c] Cost estimates of a "liberal low-cost adequate diet," as calculated by Hazel K. Stiebeling, Bureau of Home Economics, January, 1942.

XUM

FIG. 1 FOUR-PERSON FAMILY

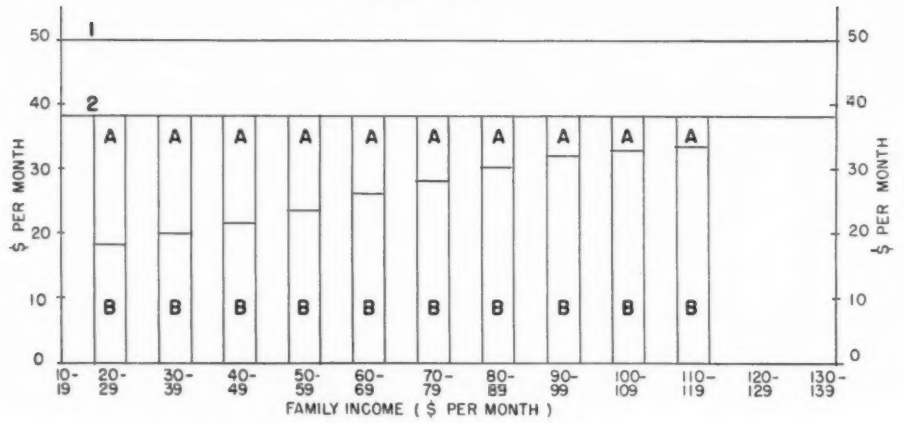
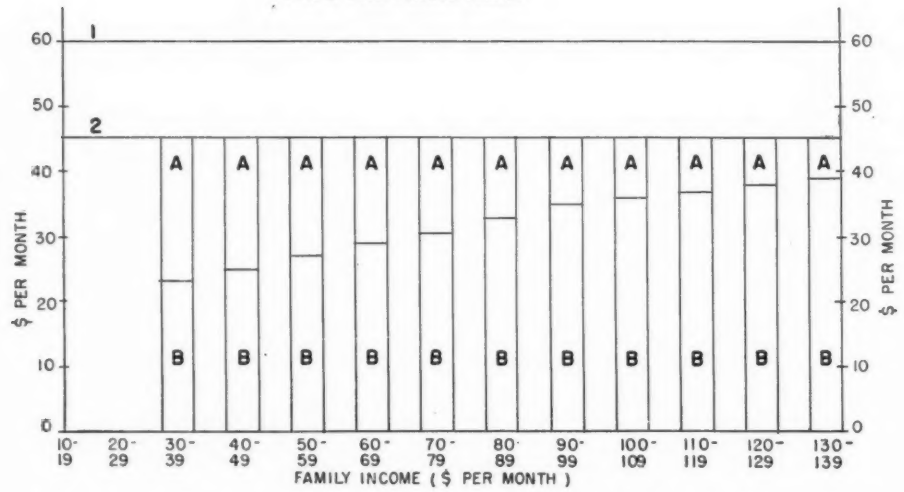


FIG. 2 FIVE-PERSON FAMILY



Legend: 1, adequacy level; 2, three-fourths adequacy level; **A**, blue stamp grant; **B**, orange stamp purchase requirement.

CHART 2. Illustrative orange stamp purchase requirements and blue stamp grants, on a variable ratio basis, by family income, for 4- and 5-person families.

2 show blue stamp grants for different classes of families according to the variable ratio pattern on the basis of the same level of orange stamp minimum purchase requirements as in table 3, although upper exclusion points are raised to avoid sharp discrimination against families barely excluded from eligibility. The purpose and probably the effect of the arrangement was to put the blue stamp money both where it was most needed and where it was most likely to result in the largest net increase in total food outlays. Variable ratios served to ease the abruptness of the upper exclusion points, which, under the standard one-two ratio, represented such a sharp discrimination against non-relief non-participant low-income families. For example, according to table 2, the highest-income eligible four-person family could obtain $15.50–20.00

per month in free blue stamps whereas a four-person family with an income just above $100 per month could not get any subsidy. In contrast, the variable ratio scheme (table 3) gradually reduced the free blue stamps as income rose. Grants were tapered off to as little as a one-ten blue-orange proportion. The question was debated as to whether or not the ratio at the lower end of the income scale should exceed, say, one-one, on the ground that participants would find it difficult to spend such a large proportionate income increment entirely on food (and on blue stamp foods in particular.) In a few areas in the South participants did not have to buy any orange stamps in order to receive free blue stamps.

As stated earlier, the orange stamp purchase requirements were minimum requirements and eligibles were permitted to make above-minimum purchases up to a certain level, averaging around 50 per cent above the minimum, and to receive additional blue stamps at the standard ratio. The introduction of variable ratios slightly complicated the making of above-minimum purchases. Also, there was some doubt as to whether additional blue stamps going to above-minimum purchasers would yield larger or smaller net increases in food expenditures than the same stamps distributed in strict accordance with some adequacy standard. If the principle had been adopted that blue stamp donations should remedy only deficiencies below a certain accepted level for total food money, then the permissive above-minimum purchases should have been abolished. However, "filling up the deficiency" was never recognized as the general operating rule in the SMA.

TABLE 4

AVERAGE MONTHLY INCOMES OF ELIGIBLE CASES, AVERAGE MONTHLY BLUE STAMP GRANTS PER PARTICIPANT CASE AND PERSON, AND AVERAGE NUMBER OF PERSONS PER PARTICIPANT CASE, DURING A TYPICAL PERIOD IN 1941–42, BY REGION OF COUNTRY

Region[a]	Average income of eligibles[b] ($ per month)	Average blue stamp grant ($ per month)		Persons per case	Blue stamp grant as % of non-stamp income
	per case	per case	per person		
Far West	$52	$ 7.6	$2.8	2.7	14.6%
Mid-West	47	8.7	2.7	3.2	18.5
Northeast	57	11.0	3.3	3.3	19.3
South	31	8.5	2.3	3.7	27.4
United States	$45	$ 9.0	$2.7	3.3	20.0%

[a] The Far West includes: Ariz., Calif., Colo., Id., Mont., Nev., New M., Oreg., Ut., Wash., and Wyo.
The Mid-West includes: Ill., Ind., Ia., Kan., Mich., Minn., Mo., Nebr., N. Dak., O., S. Dak., Wis.
The Northeast includes: Conn., Del., Me., Md., Mass., N. H., N. J., N. Y., Pa., R. I., and Vt.
The South includes: Ala., Ark., Fla., Ga., Ky., La., Miss., N. C., Okla., S. C., Tenn., Tex., and Va.

[b] Based on samples of both participating and non-participating eligibles; excludes blue stamp grant.

The aggregate subsidy paid out by SMA in the form of blue stamps was $261,000,000: $16,500,000 in 1939–1940, $83,000,000 in 1940–1941, $111,500,000 in 1941–1942, and $50,000,000 from July 1, 1942 to March 1, 1943. The per-person per-month grant was $2.09 in 1939–1940, $2.38 in 1940–1941, $2.70 in 1941–1942, and $2.98 during the eight months from July 1942 through February 1943. In table 4 the regional variations may be seen. The differences in income, ranging from $31 in the South to $57 in the Northeast per case, per month, reflect the differing relief standards over the country; the differences in blue stamp grants per person—$2.30 in the South to $2.80 in the Far West—reflect mainly the differences in orange stamp minimum requirements; the variations in persons per case—2.7 in the Far West to 3.7 in the South—apparently reflect the varying eligibility rules of SMA or relief administrations. The fact that the stamp grant of $9 per family per month raised the average family monthly income of $45 by 20 per cent to $54 indicates its importance to these needy groups.

III. NATURE OF A SPECIAL PURPOSE MONEY PROGRAM (II)

DETERMINING "FROZEN MONEY" (ORANGE STAMP) PURCHASE REQUIREMENTS

Whatever the total amount of funds available for distribution, the central problem is to see that the distribution among eligible families is that which will cause a maximum amount of the subsidy to represent *increased* expenditures on Special Commodities. The only qualification to this rule should be that no family should receive more than it needs, according to the standards employed. This qualification sets an upper limit to the aggregate amount of public funds "properly" applied to this use.[1]

It should be noted that the chance of getting all of the subsidy spent on Special Commodities increases with a widening of the list of Special Commodities. If all commodities were Special Commodities (which would mean in effect that no commodities were Special Commodities!), all of the Special Purpose Money would go for these commodities and the effectiveness of the subsidy would be 100 per cent. But this result could have been obtained with a cash subsidy without Special Purpose Money. A narrowing of the list with the same size subsidy increases the likelihood that the plan will result in expanding consumption of particular listed commodities. The important relationship between the width of the list and the size of the subsidy is this: *the amount of Special*

[1] The Food Stamp Plan had an arithmetic limiting factor in the form of the one-two blue-orange ratio, based on the maximum orange stamp purchases permitted.

Purpose Money must always exceed the participants' normal expenditures on Special Commodities.[2]

The net increase in outlays on Special Commodities by participants over their normal outlays on Special Commodities may be called "effectiveness," and the difference between the subsidy and the increase on outlays on Special Commodities "substitution."[3] For example, if a family normally spent $20 per month for food, but was required to buy only $14 in orange stamps and received $7 in blue stamps ($21 in all), the family could spend the $21 in stamps on food and use the $6 ($20 minus $14) thus released for non-food purposes. This $6 is called "substitution" and the $1 increase in food outlays "effectiveness"; substitution ($6) plus effectiveness ($1) equals the blue stamp subsidy ($7); in percentage terms, substitution in the illustration is 86 per cent and effectiveness 14 per cent.

There are two general ways of fostering maximum effectiveness or minimum substitution: one is to accommodate existing taste patterns of eligibles; the other is to bring about changes in their taste and expenditure patterns as a condition of their receiving the subsidy. Accommodating existing taste patterns means trying to put the Special Purpose Money in the hands of eligibles most likely to keep substitution at a minimum, i.e., eligibles who, without any compulsion, are most inclined to devote any addition to their incomes to Special Commodities. In fact, the distribution would be that which would be employed in allocating a cash subsidy for the same purpose: maximum effectiveness would be obtained by equalizing the marginal effectiveness of the subsidy funds in increasing outlays on Special Commodities, as among the various recipients.

But even the best accommodation of existing taste patterns will not yield a very high rate of effectiveness. For example, if eligible families ordinarily spend one-fourth of their incomes on Special Commodities, it might easily be necessary to spend $40 per month per family to raise the Special Commodities outlay by $10. For one million families this would mean $40,000,000 per month to obtain an increase of $10,000,000. This is an expensive way of raising the eligibles' consumption of Special Commodities.

Therefore we turn to two other techniques which promise a higher yield from the subsidy. These techniques, in contrast to that just described, presuppose taste patterns of eligibles which are moderately or even extremely flexible, i.e., that it is possible to get eligibles to spend the income increases represented by the grant of Special Purpose Money in ways other than their prevailing taste patterns would dictate. The first such technique consists of advertising and education of various sorts. If the expenditure and consumption habits of eligibles have some flexibility, it is possible to use the devices of advertising, salesmanship and education to get them to buy more Special Commodities than they would otherwise be inclined to buy. There is no reason to expect any better or any worse results from such efforts than are obtained in the ordinary taste-changing efforts of advertisers, educators, and propagandizers. Such efforts should not be neglected.

The second and more promising technique is one which involves the use of quasi-compulsory features. It is designed to insure that the participants' normal purchases of Special Commodities are maintained and that the free Special Purpose Money goes strictly for supplementary expenditures on Special Commodities. This device consists of *requiring participants to buy Special Purpose Money to the extent of their normal purchases of Special Commodities as a condition for getting the free Special Purpose Money.* The purchased Special Purpose Money may conveniently be called "Frozen Money," although it may or may not be of the same physical form as free Special Purpose Money. This freezing procedure completely ties up the normal expenditures and the grant into claims which are properly usable only for acquiring Special Commodities. Participants are thus compelled to reshape their expenditure patterns or violate the expenditure rules of the Special Purpose Money system. If the listed commodities normally take only a small fraction, say 25 per cent, of the income of these families, devotion of the entire increase in income to Special Commodities implies a severe twisting of taste patterns, especially if the subsidy to individual families is sizable—amounting to as much as 50 to 100 per cent of what they ordinarily spend on Special Commodities.[4]

Freezing of regular money into Special Purpose Money to the full extent of normal expenditures on Special Commodities does provide a solution for the problem of substitution, if all other parts of the plan work properly. However, undesired secondary results may follow upon the adoption of this procedure. Participants attempting to use the income increment (the Special Purpose Money subsidy) according to their own preference systems may try to spend only part of the Special Purpose Money for Special Commodities and use the rest of it for other commodities by disobeying the expenditure rules. Or they may obey the expenditure regulations and yet alter their purchases of other commodities in ways which may not comport with some broader social considerations worthy of attention.

[2] As noted in the preceding chapter, full cognizance of this relationship was not taken in the administration of the Food Stamp Plan. This relationship is perhaps the most important single guiding principle of a Special Purpose Money Plan.

[3] Effectiveness can be negative, and is likely to be so for some individual commodities. The terminology used here is that developed by the Stamp Plan administrators. "Elasticity of demand for food with respect to income" is the equivalent of "effectiveness" in the language of economic theory.

[4] See appendix B for a detailed theoretical analysis by means of indifference curves.

This latter possible, or even probable, development warrants careful analysis. Participants' demands for various kinds of "other commodities" may remain the same, decrease, or increase in consequence of the Special Purpose Money program, i.e., other commodities may be independent, substitute, or complementary. If the expenditures by participants on all other commodities remain the same (are independent) when the Special Purpose Money increment is added to regular income, no special problems are raised. The more likely situation is that some non-Special Commodities will be independent, that others will be complementary (purchases of them increased with the acquisition of more Special Commodities), and that still others will be substitute commodities (expenditures on them reduced with the acquisition of more Special Commodities). In establishing an actual Special Purpose Money program, cognizance should be taken of the particular kinds of commodities which are substitutes for or complements of Special Commodities, so far as knowledge of eligibles' tastes permit. If eligibles are given bananas it may be of interest that they buy more cream and less meat (cream complementary to bananas and meat a substitute). If they are given more medical care or health education, it may be of interest that they buy more fruits and less drugs. There is no *a priori* reason why substitution effects should be of more concern than complementation effects, so for any particular program these obverse results should be examined closely. If the legislators or administrators of the plan do not want to see increases in expenditures by participants on complementary commodities, they should try to discourage this result by conditioning the subsidy on keeping outlays on these complementary commodities down to "normal" (the amount which would be spent in the absence of the subsidy). Conversely, if the interest lies in maintaining normal expenditures on substitute commodities, steps should be taken to get the participants pledged to maintain their normal outlays on these commodities which they consider substitutes.

However, if all of the free Special Purpose Money goes for additional Special Commodities, any increase in expenditures on complementary commodities will be exactly equal to the decrease in expenditures on substitute commodities. Hence, when effectiveness is 100 per cent (substitution zero), stabilizing expenditures on *either* complementary or substitute commodities is sufficient to hold constant the expenditures on both, as groups. The stabilization can be achieved by using auxiliary forms of Special Purpose Money. The prevention of expanded outlays on complementary commodities can be accomplished with *Ration Money*; the prevention of contracted outlays on substitute commodities can be accomplished by the employment of *Frozen Money*. Administrative convenience should determine which will be used.

Ration Money could be sold to participants, but only to the extent of their normal purchases, for the purchase of complementary commodities. Participants could acquire complementary commodities *only* by using this Ration Money, so that their purchases of complementary commodities directly and of substitute commodities indirectly would be restricted to the normal level. The use of Ration Money as a part of an expansionist Special Purpose Money program raises political questions. Since only participants would be denied complementary commodities in excess of their normal consumption, the regulation would give the appearance of discrimination.[5]

In contrast, the employment of *Frozen Money* to maintain expenditures on substitute commodities does not encounter the same administrative or political objections, since it requires that participants spend at least their customary amounts of money on substitute commodities and does not explicitly deny them the privilege of spending their remaining regular money on complementary commodities. Therefore, the alternative procedure of maintaining expenditures on substitutes—requiring a lifting rather than an explicit depressing of normal purchasing inclinations—appears preferable. Participants would have to buy Frozen Money to the extent of their normal purchases of substitute commodities as a condition of receiving a subsidy. The extent to which regular money would need to be tied up in Frozen Money, which could well be made expendable for either Special Commodities or substitute commodities, obviously depends on the size of the participant outlays on substitute commodities. If we assume that it is desirable to have normal purchases of Special Commodities *and* of substitute commodities maintained, it is necessary to freeze normal expenditures on substitute commodities into Frozen Money and to freeze normal expenditures on Special Commodities into Special Purpose Money, which latter is supplemented by the free Special Purpose Money, of course.

It should be evident that such restrictions on the ways in which these various types of money could be spent call for substantial changes in the expenditure behavior of participating families. Since the purchase requirements of Special Purpose Money and Frozen Money for individual families would be determined from statistical tabulations of actual expenditures for many families in the same income-family size group, individual families would inevitably feel these rigidities unevenly, because there is considerable variation in expenditures on particular types of items, even among families of the same size and with substantially the same income.

The rigidities of the freezing scheme just described

[5] Apparently no consideration was given this use of Ration Money in the construction of the Food Stamp Plan. The general problem of rationing receives further treatment in appendix C.

may be so great for any likely Special Purpose Money plan that some relaxation may be necessary. That is, freezing of normal purchases of Special Commodities into Special Purpose Money and freezing of normal purchases of substitutes into Frozen Money will reduce expenditure flexibility greatly if the aggregate of limited-use money represents as much as, say, two-thirds of the total income and if the list of Special Commodities is narrow enough to be effective. One workable modification which still calls for the employment of Frozen Money is to eliminate the requirement that normal purchases of Special Commodities be tied up in Special Purpose Money, but require that the amount of Frozen Money to be purchased includes normal purchases of Special Commodities as well as of substitute commodities, and permits the Frozen Money to be spent on either Special Commodities or substitute commodities.

Although this arrangement provides the sought relaxation, it amounts to almost a structural defect in the plan, so far as effectiveness in increasing expenditures on Special Commodities is concerned. The reason is that participants may purchase all or nearly all of their normal amounts of Special Commodities with the free Special Purpose Money, and then spend the Frozen Money representing Special Commodities entirely or almost entirely on substitute commodities. The effect is to have the subsidy spread over both Special Commodities and substitute commodities.[6] The subsidy is spread thinner than in the case given principal attention here. If these two classes of commodities take a sizable fraction of total income of participants, the effect of this arrangement is little better than an equivalent cash subsidy. As a rule-of-thumb it seems safe to say that this structural relaxation should not be permitted if Special Purpose Money plus Frozen Money represents much more than two-thirds of the income of participants. If the essential concern is with increasing outlays on substitutes as well as on Special Commodities, the list of Special Commodities might just as well be broadened to include substitutes and only a single type of Special Purpose Money be employed.

The principal combinations of ways of using Special Purpose Money and Frozen Money may be summarized:

I. Grant subsidy in Special Purpose Money; freeze no part of normal income.
II. Grant subsidy in Special Purpose Money; freeze normal purchases of Special Commodities into Special Purpose Money.
III. Grant subsidy in Special Purpose Money; freeze normal purchases of Special Commodities into Special Purpose Money, but also freeze normal expenditures on substitute commodities into Frozen Money.
IV. Grant subsidy in Special Purpose Money; freeze normal expenditures on both Special Commodities and substitute commodities into Frozen Money.[7]

In the general discussion below we shall consider alternative II—normal expenditures on Special Commodities frozen into purchased Special Purpose Money—as the standard case. The discussion will apply to only this case unless others are explicitly mentioned.

Efficient operation of a Special Purpose Money system requires accurate information on the expenditure patterns of eligibles. Eligibles must be classified into proper income-family size groups in order to determine the size of particular grants and freezing requirements. This accurate information can be obtained only by making actual studies of expenditure habits. As will be shown in the next chapter, effectiveness and substitution and induced changes in expenditure and consumption habits of participants can be determined from these data. The administration of the program, to be effective and equitable, must rest on facts. Since these facts get out of date, it is necessary for such studies to be made more or less continually and for freezing requirements and grants to be revised in the light of the best information currently available.

It should be clearly understood that failure to freeze normal purchases of Special Commodities into Special Purpose Money will result in substitution. It amounts to the same thing whether the purchase requirement is incorrect or whether the administrators of the program grant free Special Purpose Money to persons who avoid purchasing their correctly established requirements. It bears repeating that purchase of less Special Purpose Money than normal expenditures on Special Commodities enables participants to use the free Special Purpose Money to acquire their normal volume of Special Commodities, and thus releases regular money for other purposes with the net effect of having the subsidy go for other than the intended purpose. Effectiveness is reduced; substitution is increased.

A slightly different aspect of the problem of maintaining normal purchases of Special Commodities occurs when eligibles participate during one time

[6] The Food Stamp Plan embodied this structural defect. An example of its effect is as follows. Suppose typical families normally spend $20 per month on food ($10 on Special Food Commodities and $10 on substitute food commodities), and that they freeze $20 into Frozen Money (orange stamps) and receive $10 in free Special Purpose Money (blue stamps). If they make their customary even distribution of food money between Special and substitute commodities ($15 each), only one-half ($5) of the subsidy will have been effective. This is no better than can be achieved with only one type of Special Purpose Money, for if the $20 normally spent on food were all frozen into Special Purpose Money and supplemented by $10 free in Special Purpose Money (all expendable on any foods), the distribution would be $15 each for the two classes of foods.

[7] This is the alternative represented by the Food Stamp Plan in most areas. Alternative I was employed in some parts of the South.

period in order to get the subsidy funds and then skip one or more periods before participating again. Thus fewer funds are frozen over the longer time. This may be called "time substitution." The motive behind this is to avoid freezing so much cash into Special Purpose Money, and such action indicates a preference for a given amount of cash over a larger amount of Special Purpose Money. In such cases the marginal propensity to consume Special Commodities is obviously weak. Commodities of a durable or postponable character are probably more subject to time substitution than perishable and repeatedly-bought commodities.

The setting of the purchase requirements of Special Purpose Money is a technical problem worth considering carefully. If all eligible families in any given economic power-burden (income-family size) class normally spend exactly the same amount of money on Special Commodities, the purchase requirement for each of them would be set at exactly this level. However, families having substantially the same economic power and burdens rarely buy exactly the same amount of designated commodities. Taste patterns of families vary for diverse reasons, so there is considerable dispersion, even in any given income-family size class, around the average outlay for any designated group of commodities. Freezing requirements might be individualized, but this is extremely expensive and cumbersome for a large-scale assistance program and is of course subject to administrative abuse.

In view of the fact that individualization of freezing requirements is impracticable and in view of the fact that normal expenditures on Special Commodities vary, even among families in the same group, how should the freezing requirement be set for any given group in order to obtain maximum effectiveness from the subsidy? Should the freezing requirement be set at the average of normal outlays by these eligibles on Special Commodities, a certain amount below, or a certain amount above the average? If eligibles are not too closely guided by the freezing requirement, as they well may not be, the requirement can advantageously err on the high side.[8]

In an endeavor to make the blue-stamp donation strictly supplementary to normal food outlays, the SMA required participants, with minor exceptions, to purchase a certain minimum amount of orange stamps, expendable on all regular food items. This minimum supposedly approximated normal outlays on all foods—blue stamp foods and others—eaten in the household. The reason for requiring the freezing of normal expenditures into orange stamps (Frozen Money) was that participants would otherwise be inclined to substitute free blue stamps for part or all of their normal food outlays, thus releasing an equal amount of regular food money for non-food purposes.

It is to be noted that the Food Stamp Plan called for the freezing of normal expenditures on blue stamp foods into orange instead of blue stamps, and thus invited the substitution of blue stamps for ordinary cash outlays on blue stamp foods. This structural defect of the Stamp Plan made it almost inevitable that, with a broad list of blue stamp foods, the orange stamp purchase requirement merely prevented substitution of blue stamps for normal food expenditures.[9] In other words, participants could obey the rules of the Stamp Plan and yet have almost complete latitude in buying different foods with their orange and blue stamps. Participants would not have spent differently if all of their stamps had been orange. In short, the two colors of stamps were unnecessary within the framework of the Stamp Plan as set up and operated between 1939 and 1943.[10]

The Surplus Marketing Administration had very little factual information upon which to base its requirements at the start, so it used the results of the 1935–1936 survey of consumer expenditures, according to which families with incomes of less than $500 per year spend $203 for food, or approximately $1 per person per week.[11] For want of better information, this overall figure was widely used in setting minimum orange stamp purchase requirements. In rural areas the minimums were reduced for eligibles producing part of the food they ate.

By the spring of 1940 the SMA began to conduct investigations of its own to discover, among other things, the food purchase habits of eligibles. The importance of freezing requirements to the conduct of the program almost demanded such studies. Determining the normal food expenditures of eligibles,

[8] The problem of selecting an optimum point is worked out under certain assumptions later on in this section in connection with the discussion of the Stamp Plan. See appendix A for full treatment.

[9] For example, if the eligible family normally spending $20 for all food froze all of the $20 into orange stamps and received $10 in blue stamps, it would have $30 to spend on food. Substitution would then be zero and effectiveness $10, or 100 per cent. But if normal expenditures on blue stamp foods took $8 out of $20, it would be possible for this participant family to spend all of its $10 in blue stamps on blue stamp foods and to increase its outlays on these particular foods by only $2, or one-fifth of the blue stamp subsidy. Since this family normally spent $8 of $20 on blue stamp foods, it would probably spend $12 of $30 on them when participating, which meant that the freezing of $10 of $30 into blue stamps would not interfere at all with the participants' freedom of choice among foods. *In general, if participants were disposed to spend one-third of their food money on blue stamp foods, the two colors of stamps were useless, even though all the rules of operation were complied with perfectly.* Hence the name "structural defect." Statistical studies in Newark, New Jersey, Baltimore, and New York City have borne out this generalization.

[10] The Comptroller-General wanted the distinction kept between the stamps bought by the participants and those donated by the government for accounting purposes, but this need could have been met by simpler arrangements.

[11] National Resources Committee, *Consumer Expenditures in the United States*, p. 23.

classified according to significant variables (particularly income and family size), became one of the most important activities of the staff of the Surplus Marketing Administration. From these "food purchase studies" orange stamp purchase requirements could be established for eligibles of different income and family-size groups on a systematic basis. Empirical studies thus provided the basic information for determing these requirements. Although this method was not used as widely as might have been expected, it gradually supplanted "paper" relief budgets and rules-of-thumb as guides in setting purchase requirements. To be sure, some expenditure patterns worked out by welfare agencies did show what people actually spent for food, and thus provided an individualized and even more satisfactory basis for setting freezing requirements than the typical outlays of families grouped together by table size and income.

In most areas the orange stamp purchase requirements were far below the normal food expenditures of the eligibles. This situation arose in part from the lack of or failure to make use of information on the food expenditure behavior of eligibles. It was also in part a result of the pressure by state and local relief agencies to get SMA to bear a considerable part of the financial burden of caring for their poor. Where the freezing requirements were set with reference to relief category and family size, no attention was paid to income above the regular relief payments, so that income as a factor affecting food expenditures—and hence orange stamp minimum purchase requirements—was partially lost.

The most systematic procedure called for the empirical determination of average food expenditures of non-participating eligibles (either before or after the introduction of a program in an area) classified into family sizes and into fairly small income groups (class intervals of $10 or less). Minimum orange stamp purchase requirements were then set at or near (usually below) the average of actual food expenditures for each group, provided reasonable continuity in requirements was maintained from one group to another.[12] Since sampling did not usually yield data for all family sizes and income groups, some of the orange stamp requirements were determined by interpolation and extrapolation. See tables 2 and 3 and charts 1 and 2 in the preceding chapter for illustrative orange stamp purchase requirements and their relation to the blue stamp grants. [13]

Eligibles were expected to participate regularly in order to maintain normal purchases over a period of time. Under the most rigorous regulations, if they missed more than one purchase period (usually a month) in twelve, they were denied the privilege of participating for a period of three months. Irregular participation meant, in effect, reduced orange stamp minimum purchase requirements and constituted one form of substitution ("time substitution") of blue stamps for ordinary food expenditures.

Purchase requirements were ordinarily monthly rates, but eligibles were able to purchase pretty much at their own convenience. The SMA tried to arrange purchase periods which would fit into the income-receiving periods of the eligibles. Instalment purchases sometimes gave rise to "under-issuance," that is, below-minimum purchases of orange stamps for the month. Experiments in holding back a considerable part of the free blue stamp grant until the total monthly minimum was purchased were tried, sometimes with the addition of a bonus of a few extra blue stamps.

The Stamp Plan carried a flexible feature in an attempt to accommodate variations in family food expenditures higher than the minimum requirements. While participating eligibles could not purchase less than the minimum quantity of orange stamps, they were permitted to buy a limited number of orange stamps in excess of the minimum requirement and receive additional free blue stamps at the customary ratio. By this means some eligibles obtained food in excess of any reasonable adequacy level, such as that determined by the Bureau of Home Economics. The maximum permissible orange stamp purchase was often as much as 100 per cent above the minimum, although this gap was gradually reduced to 50 per cent or less. The theory behind these permissive above-minimum purchases was that families ordinarily spending more than the required minimum amount on food would be lured by the opportunity of securing even more free food to freeze the full amount of their ordinary food outlays or even more into orange stamps. Hence, minimum orange stamp purchase requirements were unnecessary for such families, for they were willing to spend on food, in addition to their regular food outlays, all of the blue-stamp increment to income. Above-minimum purchases were quite common, but it is uncertain whether they arose from too-low purchase requirements, illegal financing of purchases by grocers and others, accompanied by non-compliance with expenditure rules, or genuine conformity with the intended purpose. The strong argument in favor of minimum purchase requirements works equally well against above-minimum purchases,

[12] Appendix A contains a discussion of the problem of selecting orange stamp requirements which will give maximum effectiveness. Interesting but rather technical points are involved.

[13] With the view to establishing more accurate freezing requirements and more equitable blue stamp contributions the research staff of the SMA sought to isolate other important variables affecting the size of food outlays. Even within any one income-family size class, food expenditures varied considerably from family to family. (The coefficient of variation usually lay between 25 and 40 per cent.) These food purchase studies are one of the principal long-run contributions of the Food Stamp Plan, since they provide detailed information—completely lacking from other sources—on the food expenditure habits of the poorest sections of the population.

so it would appear that SMA complicated the Stamp Plan considerably and added greatly to its enforcement problems in order to accommodate a very small number of cases.

DEVISING ISSUANCE, EXPENDITURE, AND REDEMPTION PROCEDURES

Special Purpose Money, to accomplish its purposes, must be spent by only the participants for only Special Commodities. Participants must not use their Special Purpose Money to obtain cash, to pay off debts, or to buy goods and services not listed as Special Commodities. They are expected to consume these articles, not sell them.

Similarly, the only persons, firms, or others permitted to accept Special Purpose Money should be authorized sellers of Special Commodities. The following rules apply to them: they must not accept Special Purpose Money from persons not authorized to spend it; they must not accept Special Purpose Money in exchange for other than Special Commodities; they must redeem the Special Purpose Money through authorized channels. Original redeemers will ordinarily wish to convert it into regular money as quickly as possible because cash has wider and more valued uses.[14] Since both participants and original redeemers (sellers) are certain to find non-compliance with these rules advantageous at times, it is necessary to have a policing system which can discover violators and attempt to have them punished in a way which will deter others from non-compliance. Outright counterfeiting may also be attempted. Policing is especially difficult if the original redeemers are numerous.

Out of this situation comes the suggestion for a restriction of the number of eligible redeemers of the Special Purpose Money. This means licensing selected persons or firms as sellers and perhaps charging them a fee for the privilege of selling commodities to Special Purpose Money holders. By concentrating the Special Purpose Money trade into fewer hands, its significance to these parties increases and the compliance problem with respect to them tends to be eased. However, other problems arise in connection with a restrictive licensing system. Unlicensed sellers might still accept Special Purpose Money and then redeem it through colluding with licensed dealers. Also, with licensing in effect, the Special Purpose Money trade becomes more important and worth dealers' making special efforts to secure licenses. Then the question arises as to whether licenses should be rationed out upon "certification of need," or whether they should be priced so as to restrict the licensed dealers to a predetermined number simply by the height of the fee. Also, a restrictive licensing system might reduce the number of outlets available to participants to such an extent that sellers could discriminate against the participants in terms of prices, quality, or services. Hence, restrictive licensing places upon the administrators the additional tasks of selecting licensees and enforcing equal treatment. Finally, it should be pointed out that such licensing might have important effects on the branches of the retail or other trades involved. With a restrictive licensing system, participants would be limited in their opportunities to dispose of their Special Purpose Money and the sellers formerly selling to these persons would experience a substantial decrease in demand, perhaps sufficient to cause them to withdraw from business. The total Special Purpose Money program would have to be quite large and the restrictive licensing system quite tight for this result to occur, however.

Although it is undoubtedly necessary that redeemers of Special Purpose Money be registered with the administrators of the plan and their redemptions recorded, the highly restrictive licensing system, with its attendant close regulation, seems to have little to commend it. A moderate registration fee, the trouble of redeeming Special Purpose Money according to regulations, and the furnishing of various items of information to the administration should be sufficient to deter those sellers doing a very small volume of business in Special Purpose Money.

The final conversion of Special Purpose Money into regular money by the administration calls for brief discussion. It should be done as simply as possible, consistent with the requirements of auditing and recording of redemptions of Special Purpose Money by particular sellers. One method is for the sellers to turn in the Special Purpose Money directly to the administration for conversion into regular cash. However, if the number of sellers of Special Commodities is very large, it may be convenient to use intermediaries. These intermediaries would ordinarily be other persons or firms (including banks) with which the sellers customarily deal. The intermediaries would redeem the Special Purpose Money at par into regular money and would then make a consolidated claim against the government.[15] Fewer checks need be written under this arrangement, but here again a sharp restriction in the number of available intermediaries may make possible the imposition of discriminations on the sellers. If intermediary redeemers are used, some inspection or policing tends to be needed in order to prevent petty racketeering and various sorts of discrimination. It is probable that

[14] However, if the Special Purpose Money plan is used to put into the hands of participants special claims which are especially sought by many people in preference to cash—such as Ration Money—the orderly redemption of the Special Purpose Money becomes absolutely essential, for if redemptions are not closely controlled, the Ration Money can be used more than once to secure the Special Commodities. Wartime rationing made this clear.

[15] The ration banking system of the Office of Price Administration for handling the return flow of war ration coupons illustrates this procedure.

XUM

the difficulties of enforcing compliance with rules among intermediaries exceed the difficulties of writing separate checks for more individual original redeemers of the Special Purpose Money. Especially does the direct redemption channel seem better if the original redeemers—the sellers of the Special Commodities to the participants—redeem sizable amounts of Special Purpose Money at any one time.

Intermediaries should not be permitted to pay original redeemers less than par, except under strict regulations. Redemption of the Special Purpose Money at a certain fraction of par might be feasible under a restrictive licensing system. It would mean that original redeemers, and possibly some other later-stage suppliers, would get a smaller profit per unit on Special Commodities sold to participants. Funds would go farther in expanding Special Commodity consumption. Without careful policing this arrangement might be accompanied by discrimination against participants, however.[16]

Under the Food Stamp Plan, stamps were customarily issued to participating eligibles at relief offices, although they were issued by mail in many rural areas in the West. In either case the eligible had to present evidence of his having been certified as eligible to purchase at least the stipulated number of orange stamps and to receive the appropriate number of free blue stamps. Issuance was ordinarily monthly for a particular eligible, although some areas arranged for purchases at shorter intervals.

Participants could spend their food stamps with only authorized dealers. Stamps were not transferable among participants. Blue stamps could properly be spent only for blue stamp foods, as named in the monthly list, and orange stamps for all food products. Household equipment, beer, wine, carbonated beverages, and the like could not be purchased with the stamps. Stamps could not be used to pay back bills. The obligation to obey these regulations was upon both the participants and the authorized food dealers.

All food dealers selling to final consumers were eligible to become authorized receivers ("original redeemers") of blue and orange stamps. These dealers had to furnish some information concerning their businesses and had to redeem the stamps according to the rules laid down by the SMA. Dealers redeemed the stamps at par through wholesalers or banks or SMA directly. Food industry committees assisted the retailers in operating under the Stamp Plan and provided an organized link between SMA and the grocers. Their economic interest should have made grocers an active force in support of measures designed to reduce substitution, but they were apparently not sufficiently well acquainted with the mechanics of the Plan to discover which policies stood to benefit them most.

Since disobedience of the expenditure rules could nullify effectiveness of the program beyond that obtainable with a strictly cash subsidy to eligibles, the SMA had to establish a compliance staff. This group found it necessary, by the very nature of the situation, to concentrate its policing efforts on grocers rather than on participants. The compliance organization also had to ferret out counterfeiting and racketeering schemes. An expensive, elaborate, and rather ineffective auditing system was set up to control redemption and assist compliance.

PREVENTING REDUCTION OF ELIGIBLES' INCOMES

The granting of the Special Purpose Money subsidy is liable to evoke a concomitant drying up of other sources of income or the increasing of burdens on the participating families. If other income decreases or burdens increase when Special Purpose Money is provided, the effect of the subsidy is simply to ease the financial drain on persons, firms, or public agencies having power over the fortunes of eligibles or their obligations. For example, if the eligibles are public assistance cases, the governmental agencies (local, state, or national) assisting them may cut down their grants with the coming of a subsidy in the form of Special Purpose Money. Or these agencies may increase the burden on particular cases by requiring that the eligibles meet certain standards in order to receive assistance (such as deducting from their assistance grants certain amounts for selected items). If eligibles include non-public assistance persons, their income payments from private sources, whether business or charitable, will tend to fall. The strength of this tendency depends on the bargaining power—in economic or political terms—which the eligible group has in the community and on the acceptance of such curtailments by the administrators of the Special Purpose Money system.

The grant-in-aid system by which the federal government assists states and localities and by which states assist localities is fraught with tendencies of this sort. Where the eligibles are partial or complete charges of the lower-level governmental units, the coming of assistance in whatever form from the federal government is a signal for the local governments to reduce their taxes and corresponding expenditures. The inevitable tendency seems to be for a federal program which starts out to be supplementary to become merely a substitute. Federal financing thus tends to replace state and local financing; and of course the next step is for federal control to supplant state and local control of the activities involved, in accordance with the time-honored maxim that "he who pays the piper calls the tune."

Even though state and local governments may be short-sighted in following such a policy, they do not

[16] The Surplus Marketing Administration considered using such a discount system, but decided against it in order to make the Stamp Plan more attractive to food dealers.

resist it. The taxpayers supporting the state and local governments in particular places may or may not be harder hit by federal than by state and local taxes, but the alternatives are difficult to compare on this score. Localities feel weak in affecting federal policy, so they want to grab what they can of any funds offered. The grant from the federal government looks like a windfall and readily strikes the groups interested in state and local government economy as an excellent substitute for their tax funds. Also, deficit financing by the federal government—far in excess of that available to the state and localities—serves to obscure the tax incidence of the funds used to support grant-in-aid programs. In spite of railings by state and local government officials and politicians about the importance of their political autonomy, they do not refuse federal aid. They want to have their cake and eat it too: they want to have the power to spend and yet obtain the spendable funds without levying and collecting taxes! This politicians' paradise is only temporarily available in the grant-in-aid arrangement, for, although the shrinkage of local sources of funds brings the fuller federal financial assistance, before long the attendant federal supervision appears. But any particular set of politicians knows that this supervision develops only over a considerable period of time—some several years or even decades—and that their political capital will have been made by that time. And the Congressman or Senator from any district or state is judged in considerable measure according to his ability to get federal funds brought into his bailiwick. Thus from all sides does the tendency operate.

The net effect of these influences on the Special Purpose Money system is for the subsidy in the form of Special Purpose Money to become a substitute for the previous payments from local sources. This result may take place, also, with other federal agencies, although in lesser degree. For example, if one federal assistance program is under fire for any of a variety of reasons, it may take a cut in its appropriation with more or less consciousness of the likelihood that a supplementary assistance program of the Special Purpose Money type will simply become a substitute source of funds to the former recipients.

What is necessary, then, to prevent this reduction in other income or increase in burdens from accompanying the introduction of a supplementary subsidy program of the Special Purpose Money type? Two types of action for forestalling reduced payments to eligibles appear feasible.

First, and more important, the administrators of the Special Purpose Money program should make clear to Congress, to state and local officials, and to the general public the nullifying effects of parallel curtailments. Then the plan should not be introduced into an area until an agreement is made with the public assistance and/or private agencies or firms concerned that their payments to eligibles will not be decreased (and increases which would otherwise occur not be put off) as a consequence of the introduction of the Special Purpose Money plan. Such an agreement is more effective, obviously, in preventing reductions in payments or increased burdens than in contributing to the carrying out of improvement programs, unless these improvements are required in advance of the introduction of the subsidy plan. It can be enforced only if the administrators have the power to bring about a reduction in the Special Purpose Money subsidy going to a particular group or locality or to withdraw it completely. This leads to the other weapon for seeing that the Special Purpose Money subsidy does not discourage improvements.

Second, but much less important, the Special Purpose Money scheme should probably not be used continuously in any particular locality. The local governmental units (or other groups) then count on it as a device for reducing their own contributions. Introduction and withdrawal of the program in any given area permits some flexibility in moving varying quantities of Special Commodities. There would be political and administrative objections to such intermittent use of a Special Purpose Money program unless the basis were clearly established in advance. Intermittent use would tend also to increase time substitution.

In order to prevent its funds from becoming aids to local taxpayers rather than supplements to the incomes of poor people and farmers (and other sections of the food industry), the SMA endeavored to obtain guarantees from the state and local welfare agencies that they would not reduce welfare grants nor fail to raise them because of the availability of free food stamps.

To combat tendencies of this type SMA even demanded the raising of standards in a few instances. The Stamp Plan did not withdraw from any area because of failure of state and local relief departments to maintain payments, nor did the Administration employ the less drastic penalty of cutting the size of the blue stamp grants, but on occasion the threat of withdrawal was used to secure maintenance of acceptable relief standards. Where non-relief low-income families were eligible, it was much more difficult for SMA to bring effective pressure to bear upon the payers of income to eligibles. It was almost impossible for SMA to know the extent to which it was interfering with increases in grants, but it was possible to know about and guard against decreases. The data on relief payments in relation to blue stamp grants have not been carefully compared. Relief payments did not rise as rapidly as food prices after 1939, so the tendency was for relief clients to obtain less food or lower quality food and for relief agencies to pass off on SMA an increasing share of their financial burden.

XUM

SECURING PARTICIPATION BY ELIGIBLES [17]

A device like the Stamp Plan could not be considered entirely satisfactory if it failed to reach a large proportion of eligibles. Since eligibles were able, at practically no cost or trouble to themselves, to obtain 50 per cent more food money by participating in the Plan, one would suppose that 100 per cent of the eligibles would participate. To the surprise of many persons only 60–70 per cent of the eligibles participated. The total number of participants rose to a maximum of approximately 5,500,000 (persons) in May 1942, before declining gradually to just under 2,000,000 at the time of discontinuance of the plan on March 1, 1943. This low percentage of participation prevailed in spite of the generally low level of orange stamp freezing requirements. The participation rate varied greatly from place to place and among the several groups of eligibles. Part of the non-participation and part of the variation in the participation rate from place to place were due to variations in eligibility standards and records. Such variations, however, do not wholly explain non-participation.

Why did so many eligible families fail to accept "something for nothing"? This has been a favorite subject of speculation among all persons acquainted with the problem and many complicated theories have been heatedly expounded to explain this curious phenomenon. Only in late 1941 was the problem attacked scientifically.[18] Participation, it was shown, did not depend on the height of the minimum orange stamp purchase requirements. Neither did it depend on several other likely factors—income, rent and utilities expenditures, number of children, etc.—because participants and non-participants as groups, were found to be alike in these respects.

In an illuminating study of non-participation in Baltimore in 1941 "lack of understanding" accounted for nearly two-fifths of the non-participation, "lack of felt need for additional food" for nearly one-fourth, while "minimum too high," a favorite explanation prior to this time, was true for only 2 per cent. One-third of the non-participants interviewed *claimed* that the minimum orange stamp purchase requirement was too high, but every one of these families, except the 2 per cent noted, was actually spending more than the purchase requirement on food. Hence their non-participation was attributed to "lack of understanding." The remainder of the non-participation was accounted for by "too much trouble," "debts," "pride," "all stores don't participate," "grocers cheat," "want cash for emergencies," and "dislike blue stamp list." From this study it was concluded that the relief clients were in great need of education in proper food habits and in the procedures of the Food Stamp Plan.

Another survey conducted in New York City in early 1942 brought similar results. "Minimum too high" was again the favorite stated reason among the non-participants (62 per cent), but 80 per cent of this 62 per cent (50 per cent of the total non-participants) actually spent more than the minimum purchase requirement on food. Hence, "minimum too high" was accepted for 12 per cent of the non-participants, but the 50 per cent were credited to "lack of felt need" and "lack of information." "Pride" (13 per cent) and "inconvenience" (12 per cent) were other important reasons; the remainder were scattered among the above list of miscellaneous reasons.

The overwhelming conclusion from both studies was that *lack of understanding* of the Stamp Plan was the basic cause of non-participation, and that "education" was the way to remedy non-participation. The efficacy of the proposed remedy was never determined because it was not tried on a large enough scale. Grocers, welfare workers, SMA representatives, and others would have had to take part in the educational program and a variety of techniques would have been necessary. Even had ignorance and misunderstanding of the Stamp Plan been removed, there would undoubtedly have remained a core of non-participating eligibles.

The general task of acquainting eligibles and others with the Plan and collecting essential operating information was performed with only moderate success. When introducing the program into an area, representatives of the SMA attempted to acquaint the local food trade, the administrators and social workers in welfare agencies, and the probable eligibles with its essential features. After this introductory stage, "education" was left largely to the discretion of the local SMA representatives, the local food industry committees, and the local welfare administrations. It was not emphasized greatly, as the foregoing discussion of non-participation indicates.

The Surplus Marketing Administration collected information on the operation of its program through its various offices and gave out some of this information in summarized form to the general public through press releases, official reports of the Department of Agriculture, and by occasional special publications from the main offices. These channels were not used to tell the effectiveness of the program in increasing food outlays among participants. In fact, effectiveness was not calculated in a systematic fashion, although the SMA determined, on a fairly satisfactory sample basis, the almost meaningless distribution of blue stamp expenditures among blue stamp foods. (It was almost meaningless because it took no account of substitution.)

[17] This section contains no general discussion of the problem of securing participation.

[18] Dr. I. Krechevsky, Chief, Economic Analysis Division, Agricultural Marketing Administration, in late 1942, brought to the problem the tools of the trained experimental psychologist. He has written two scholarly monographs on the basis of his own field research, one dealing with Baltimore, Maryland, and another with New York City.

The portion of the blue stamp issuance which represented a net increase in food outlays (effectiveness) was the cardinal figure for showing the success of the Stamp Plan. Yet it was obtained infrequently and in only a few areas. This vital information could have been secured by means of the food purchase studies mentioned above. No official report utilizing this excellent statistical material has yet been issued (1946) on the general effectiveness of the Food Stamp Plan.

It is worth observing that the Food Stamp Plan is one of the few government programs the results of which can be measured with reasonable accuracy. Many government activities, such as defending the country against foreign enemies, providing education, and conserving exhaustible natural resources, cannot be appraised in meaningful monetary or other measurable terms. In contrast, the goal of money profits and availability of a highly developed pecuniary calculus enables the private business firm to determine its policies and actions with considerable precision. Expected revenues and costs can be compared in the same dimension as profits for the firm.

The Food Stamp Plan resembles the business firm rather than most government agencies in this respect. Effectiveness may be interpreted as "gross revenues," blue stamp issuance as "costs," and the difference between "gross revenues" and "costs" as "profits" (negative or positive). The basic aims of the Stamp Plan could be achieved only if effectiveness was high. Effectiveness is measurable, its causes can be isolated, and administrative cures can be applied. These matters are discussed in the next chapter.

IV. EFFECTS OF A SPECIAL PURPOSE MONEY PROGRAM

The effects of the domestic consumer Special Purpose Money subsidy program described in the preceding chapters are similar to the effects of any government expenditure program. Certain groups in the population benefit from the services rendered and the funds expended, while others, sooner or later, tend to feel adverse effects as taxpayers or as victims of inflation. Demand and supply relationships for many commodities are changed with the result that price and production patterns are altered. Profits and profit-prospects, wages, interest, and rents are affected; there is a reshuffling of the use-pattern of invested funds, labor, and materials, durable equipment, and land. The personal distribution of income undergoes changes. The program raises the level of well-being of the participants and the sellers of the Special Commodities and tends to lower that of other groups. Under certain conditions of depression and with deficit financing, the program could benefit all groups, at least temporarily, by helping to stimulate a business revival. As with any sizable change in one part of the interdependent economic system, the whole train of consequences appears sooner or later unless obscured by other forces.

Understanding of the numerous effects of a Special Purpose Money program will be furthered by setting up an imaginary "model" and showing the changes in this model caused by the subsidy program. The effects of the Food Stamp Plan—rather difficult to trace out because of the small quantities involved—are considered in the next chapter.

ILLUSTRATION SHOWING EFFECTS [1]

Let us suppose that there are two distinct types of markets in the economic system, the market for final consumer goods and services and the market for producer goods and services, and that at least the former of these markets and all of its sub-markets are "perfectly competitive." [2] The effects of this assumption are discussed at the end of the chapter. Let us suppose further that all final consumer goods and services ("commodities") are of four homogeneous types: Special, substitute, complementary, and independent commodities. Special Commodities are those for which participants must spend their Special Purpose Money. Substitute commodities are those the demand for which shifts inversely with shifts in the demand for Special Commodities. Complementary commodities are those the demand for which shifts directly with shifts in the demand for Special Commodities. Independent commodities are those the demand for which does not shift at all as the demand for Special Commodities changes.[3] These definitions are presumed to apply to participants in the aggregate, to non-participants in the aggregate, and to both groups combined. Although they may not apply to some individual demanders among the participants and non-participants, the same "commodity" must

[1] Readers not interested in somewhat technical economic analysis may skip to the conclusion at the end of this chapter without loss of continuity. They might well examine tables 5 and 8, which contain most of the assumed figures. The effects on an individual participant are analyzed with reference to indifference curves under rather simplified conditions in appendix B.

[2] Perfectly competitive conditions in a market may be defined as follows: (1) many independent informed sellers; (2) many independent informed buyers; (3) a uniform and divisible commodity; (4) an infinitely elastic demand curve facing each buyer; (5) relatively low overhead costs and relatively elastic positively sloping marginal cost curves in relevant ranges for individual sellers; (6) each seller facing infinitely elastic supply curves for the components of his finished product; (7) each seller's sales and each buyer's purchaser a negligible fraction of the total output of the industry; (8) price uniform throughout the market except for changes rapidly communicated throughout the market consequent upon changed offers to buy and sell; (9) "normal" profits; and (10) entry into and departure from the industry subject to "low" legal and economic barriers.

[3] In chapter III substitute, complementary, and independent commodities were defined with reference to aggregate expenditures on them for operating purposes, but the present definitions, which refer to demand curves or functions, are more satisfactory for the analysis of effects.

XUM

TABLE 5

EFFECTS OF A SPECIAL PURPOSE MONEY PROGRAM ON VALUE, PRICE, AND QUANTITY SOLD, FOR VARIOUS TYPES OF COMMODITIES AND FOR PARTICIPANTS, NON-PARTICIPANTS, AND BOTH GROUPS COMBINED

Class of Consumer	Types of Commodities												Total Annual Expenditures[b]
	Special			Substitute			Complementary			Independent			
	V	P	Q[a]	V	P	Q	V	P	Q	V	P	Q	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	(1) Without Special Purpose Money Program												$
1 Participants	6	3	2	8	4	2	2.5	2.5	1	3.5	2.4	1.45	20
2 Non-participants	12	3	4	12	4	3	7.5	2.5	3	8.5	2.4	3.55	40
3 Both Groups	18	3	6	20	4	5	10	2.5	4	12	2.4	5	60
	(2) With Special Purpose Money Program												
4 Participants	8.5	3.4	2.5	6.5	3.6	1.8	5.2	2.7	1.9	2.8	1.7	1.65	23
5 Non-participants	13	3.4	3.8	11	3.6	3.1	6.8	2.7	2.5	8.2	1.7	4.80	39
6 Both Groups	21.5	3.4	6.3	17.5	3.6	4.9	12	2.7	4.4	11	1.7	6.45	62
	(3) Changes as result of Special Purpose Money Program												
7 Participants	+2.5	+0.4	+0.5	−1.5	−0.4	−0.2	+2.7	+0.2	+0.9	−0.7	−0.7	+0.20	+3
8 Non-participants	+1	+0.4	−0.2	−1	−0.4	+0.1	−0.7	+0.2	−0.5	−0.3	−0.7	+1.25	−1
9 Both Groups	+3.5	+0.4	+0.3	−2.5	−0.4	−0.1	+2	+0.2	+0.4	−1	−0.7	+1.45	+2

[a] "Q" for physical quantity in billions of units per year, "P" for price per unit, and "V" for value in billions of dollars per year, i.e., price multiplied by quantity.

[b] Sum of values in columns 1, 4, 7, and 10.

obviously be involved if the demand functions of the individual buyers are to be aggregated.

With this model in mind, let us set up a concrete example—almost entirely hypothetical—to illustrate the effects of the Special Purpose Money program. The illustration (chart 3 and table 5) supposes a national annual income paid out to final consumers of $80 billions. This figure of $80 billions is a purely illustrative one: it seems better to use such a dollar figure than to try to use percentages, which complicate the illustrations.

The total of $80 billions is presumed not to be affected by the Special Purpose Money program, which implies tax financing or non-inflationary debt financing, in the absence of changes in other income-changing forces. A Special Purpose Money program of $3 billions is used for illustrative purposes. It is large enough to have statistically discernable effects on an economy in which final consumers receive $80 billions. As table 5 shows, total consumer outlays "increase" or "would increase" by $2 billions from $60 to $62 billions in consequence of the $3 billion transfer from non-participants to participants. This means that the taxpayers, included only among the non-participants in the illustration, take $2 billions of the $3 billions from non-consumption outlays, thus reducing them from $20 billions to $18 billions annually, and the other $1 billion, of course, from consumption expenditures.[4] (The consequences of a subsidy program financed by issue of new money, or new bank credits, are sketched at the end of the chapter. The differences are important, but are of degree only for a program of this size.)

Many of the changes which would be brought about by such a Special Purpose Money subsidy are shown concisely in graphic form in chart 3. Since we shall have frequent occasion throughout this chapter to refer to this chart, an explanation of it is given herewith. Each figure in chart 3 shows the "old" and the "new" demand or demand-supply situtation for a particular type of commodity for participants, non-participants, and both combined. The solid lines depict the situation *without* the Special Purpose Money program and the broken lines the situation *with* the Special Purpose Money program. (Definite elasticities of the demand and supply curves are implicit in the illustration, but they are stated only when needed in the analysis.)

[4] The problems centering around "savings and investment" are not considered here.

Let us now proceed with the explanation of the hypothetical illustration. The Special Purpose Money subsidy shifts the participants' demand curve for Special Commodities to the right (fig. 1), their demand curve for substitute commodities to the left (fig. 4), their demand curve for complementary commodities slightly to the right (fig. 7), and (by definition) leaves their demand curve for independent commodities the same (fig. 10). The non-participants' demand curve for Special Commodities shifts leftward (fig. 2), their demand curve for substitute commodities shifts slightly rightward (fig. 5), their demand curve for complementary commodities shifts considerably to the left (fig. 8), and of course their demand curve for independent commodities remains the same (fig. 11).

The composite demand curves of the participants and non-participants are shown for each of the four classes of commodities in figures 3, 6, 9, and 12 of chart 3. Given the new and old participant and non-participant demand curves, the following changes take place in the combined curves: the combined demand curve for Special Commodities shifts rightward (fig. 3), the combined curve for substitute commodities shifts slightly leftward (fig. 6), the combined curve for complementary commodities shifts slightly to the right (fig. 9), and the combined curve for independent commodities does not change (fig. 12). It would be simplifying but generally incorrect to suppose that the supply curves for these four clases of commodities remain the same, except momentarily, while these changes in demand take place. Since expansions and contractions of output are involved, it is plausible to assume that some economies and diseconomies of scale are encountered, and the suppliers of independent commodities are not exempted from the cost and price effects of these changes in scale. Therefore, in accordance with these presumptions, we shall arbitrarily suppose that the supply curve for Special Commodities shifts negatively (fig. 3), the supply curve for substitute commodities shifts positively (fig. 6); the supply curve for complementary commodities shifts negatively (fig. 9), and the supply curve for independent commodities shifts positively (fig. 12). The elasticities and shifts of the several demand and supply curves are not independent of each other: the assumed changes in some parts of the model require changes in other parts in order to restore equilibrium. Equili-

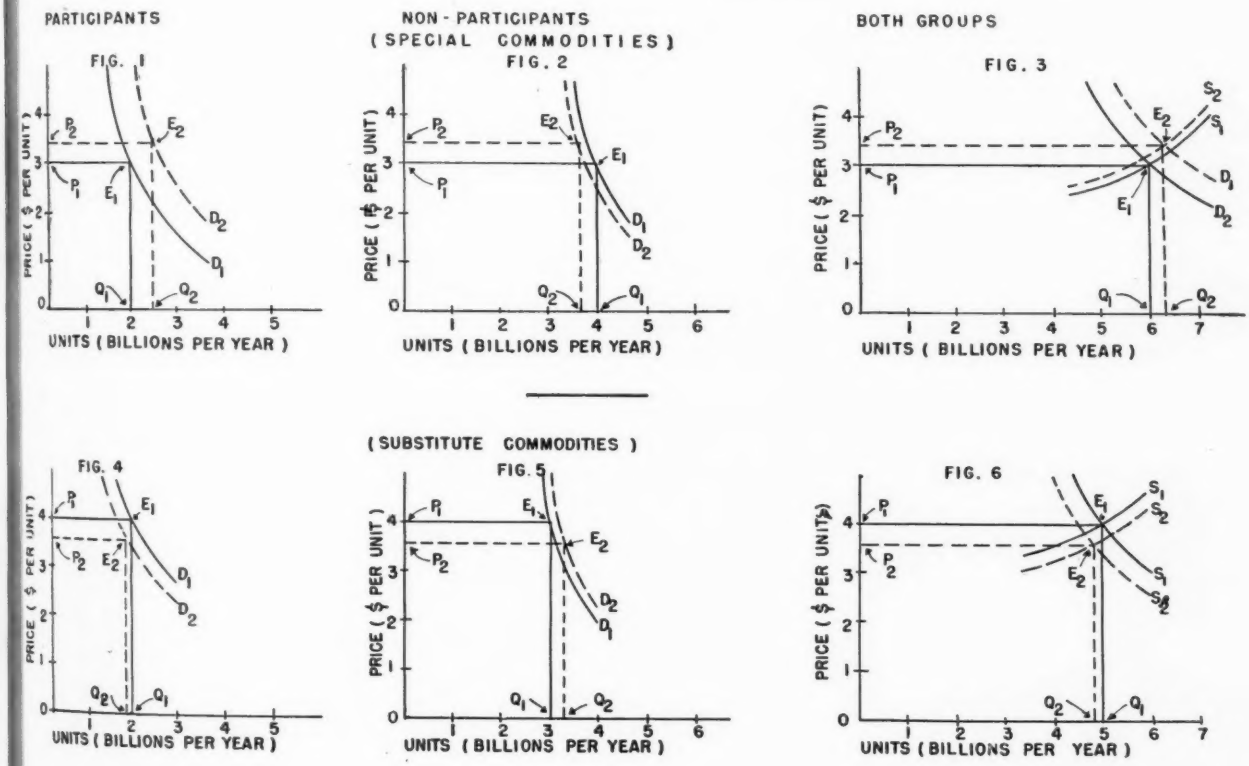


CHART 3 – CONTINUED NEXT PAGE

CHART 3 - CONTINUED

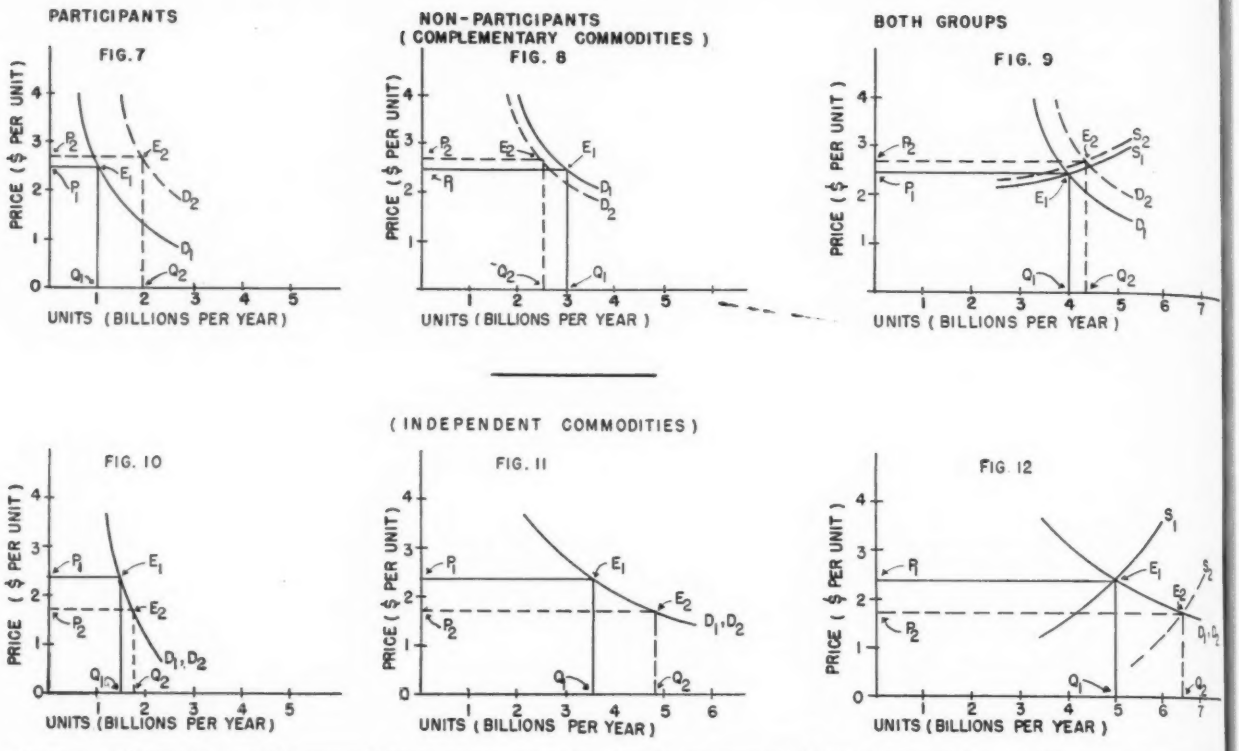


CHART 3. Effects of a Special Purpose Money program on price, demand, and supply of Special Commodities, substitute commodities, complementary commodities, and independent commodities, for participants, non-participants, and both groups combined. (Without program, ————; with program, – – – – –)

brium prices and outputs, as determined by the configuration of demand and supply curves, are shown by the intersection points (E_1 and E_2).

PRIMARY EFFECTIVENESS

Of the various effects of a Special Purpose Money subsidy program the one which warrants special emphasis is "primary effectiveness," i.e., the increase in outlays on Special Commodities by participants as a result of the subsidy. Referring to table 5, column 13, it may be seen that the subsidy amounts to $3 billions, so that participants spend an aggregate of $20 billions without the subsidy program and an aggregate of $23 billions with the program. Participants' expenditures on Special Commodities rise from $6 billions to $8.5 billions (column 1, table 1), as a result of the program, so that primary effectiveness is $2.5 billions, or 83 per cent of the subsidy of $3 billions. Only $0.5 billions, or 17 per cent, of the subsidy goes for other than Special Commodities: this is the amount of substitution. Primary effectiveness of the Special Purpose Money program is shown graphically in figure 1 of chart 3 as the difference in the areas of the two rectangles.[5]

SECONDARY EFFECTIVENESS

By "secondary effectiveness" is meant the change in outlays on Special Commodities by non-participants in the Special Purpose Money program, i.e., all non-participating consumers, eligible or not. According to table 5, column 1, non-participants' expenditures on

[5] The statistical measurement of primary effectiveness and substitution requires fairly reliable estimates of two sorts. First, participants' normal expenditures on Special Commodities—such as would obtain in the absence of this Special Purpose Money program—must be determined by inquiry or estimate. Second, the expenditures of the participants on Special Commodities after the Special Purpose Money subsidy has been introduced must also be secured. The difference in the aggregate outlays on Special Commodities by participants, with and without the subsidy program, furnishes the statistical measure of primary effectiveness. Effectiveness and substitution may be calculated for diverse groups of participants and the comparative success of the subsidy in raising the expenditures on Special Commodities by these various groups may be observed. See below, chapter V, for application of this technique to the Food Stamp Plan.

Special Commodities increase by $1 billion, from $12 billions to $13 billions, as a result of the program. The $1 billion secondary effectiveness is represented by the difference in the size of the two rectangles in figure 2.

Secondary effectiveness can be negative or positive, large or small, depending upon the interactions of its determinants, namely: (1) the shift and (2) the elasticity of the supply curve for Special Commodities; (3) the shift and (4) the elasticity of the non-participants' demand curve for Special Commodities; and (5) the shift and (6) the elasticity of the participants' demand curve for Special Commodities. These determinants may be explained with reference to the figures in chart 4.[6] The non-participant demand curves on the right side of the origin in figures 1, 2, and 3, of chart 4 are exactly the same as the one in figure 2 of chart 3; the participant demand curves on the left side of the origin (placed this way in order to permit summation of the quantities involved) are exactly the same as the one in figure 1 of chart 3. The supply curves are not shown but the supply curve implied in figure 1 of chart 4 is the one shown in figure 3 of chart 3; it has an elasticity of + 0.4 over the relevant range. A perfectly inelastic supply curve is implied in figure 2, chart 4, as is evident from the fact that the total quantity supplied is 6 million units both with and without the Special Purpose Money program. A perfectly elastic curve supply is implied in figure 3, chart 4, as is clear from the fact that price does not rise at all as the demand (combined) increases so as to move 6.7 billion instead of 6 billion units, as a result of the program.

A close observation of the relationships necessarily involved among the elements in each of the figures of chart 4 will make clear the significance of the determinants of secondary effectiveness. A change in any one determinant will, unless compensated fully by another change, bring about a change in secondary effectiveness. As observed above, the relationships among these determinants for the case in figure 1, chart 4, are such that secondary effectiveness, measured graphically by the difference in the size of the rectangles to the right of the origin, amounts to $1 billion (Primary effectiveness is represented by the difference in the area of the rectangles to the left of the origin in figure 1, chart 4.) In the case illustrated by figure 2, chart 4, however, with a perfectly inelastic supply curve, total outlays on Special Commodities by non-participants amounted to $13.7 billions, thus making secondary effectiveness $1.7 billions. In the case illustrated by figure 3, with a perfectly elastic supply curve, total outlays on Special Commodities by non-participants come to only $11.7 billions, so that secondary effectiveness is negative (− $0.3 billions).

Certain general observations concerning secondary effectiveness can be derived from the figures in chart 4. Let us neglect for the moment shifts in participant and non-participant demand curves and in the supply curve for Special Commodities. If the elasticity of the non-participant demand curve is less (numerically) than − 1.0, the more closely the supply curve approaches perfect inelasticity the larger is secondary effectiveness; perfect elasticity of the supply curve yields zero secondary effectiveness. If the elasticity of the non-participant demand curve is greater than − 1.0, secondary effectiveness will be negative, except when the supply curve is perfectly elastic, when secondary effectiveness will be zero. If the elasticity of the stable non-participant demand curve is exactly − 1.0, secondary effectiveness will be zero regardless of the shape (or the shifts) of the supply curve.

Now let us introduce the additional influence of likely shifts in the three curves. A negative shift in the non-participant demand curve, as shown in all three figures of chart 4, makes secondary effectiveness smaller than it would otherwise be, regardless of the elasticity or shift of the supply curve. If the supply curve is not perfectly elastic and if the non-participant demand curve has an elasticity of less than − 1.0, the larger the positive shift of the participant demand curve the greater the secondary effectiveness. If the supply curve is not perfectly elastic and if the non-participant demand curve has an elasticity of more than − 1.0, the larger the positive shift of the non-participant demand curve the more does secondary effectiveness fall below zero. With a perfectly elastic supply curve, the shift in the participant demand curve has no effect on secondary effectiveness. Given any particular participant demand curve, a positive shift in the supply curve will increase secondary effectiveness above zero when the non-participant demand curve has an elasticity greater than − 1.0, and will decrease secondary effectiveness (below zero) when the non-participant demand curve has an elasticity smaller than − 1.0. Again, given any particular participant demand curve, a negative shift in the supply curve will increase secondary effectiveness above zero when the non-participant demand curve has an elasticity smaller than − 1.0, and will decrease secondary effectiveness (below zero) when the non-participant demand curve has an elasticity greater than − 1.0. Other more complex relations among these three determinants may of course be devised, but their effects are most readily ascertained and observed by the use of graphs.

Secondary effectiveness will be largest as a result of a given size subsidy when (*a*) all of the subsidy goes to shift positively the (unit elasticity) demand curve of

[6] This form of representation is an adaptation of that used by G. Haberler, *Theory of international trade*, 171–177, London, Hodge, 1936.

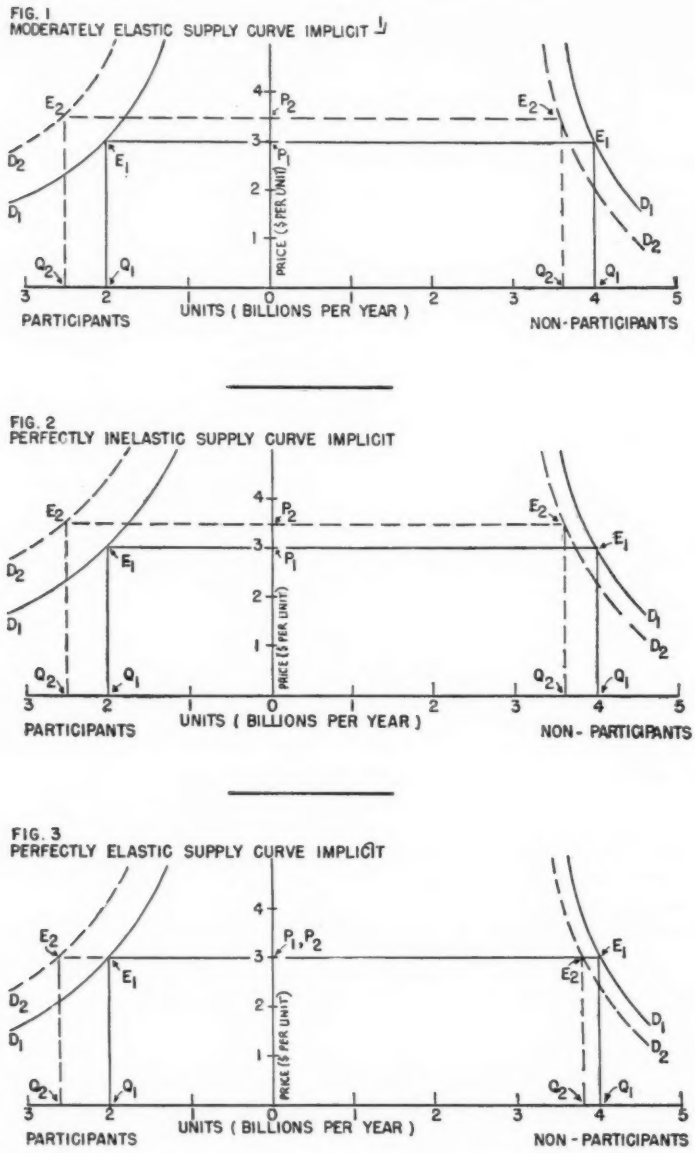


CHART 4. Effects of a Special Purpose Money program on the price of Special Commodities and the quantity of Special Commodities bought by participants and non-participants: with a moderately elastic supply curve (fig. 1), with a perfectly inelastic supply curve (fig. 2), and with a perfectly elastic supply curve (fig. 3). (Without program, ————; with program, - - - - - -)

[1] Supply curve implicit is that in figure 3, chart 3.

the participants, (*b*) taking the tax-funds from the non-participants does not, directly or indirectly, cause the demand curve (relatively inelastic) of the non-participants to shift negatively, and (*c*) the supply curve is perfectly inelastic and does not shift. Secondary effectiveness will be smallest (indeed, negative) when (*a*) only a nominal portion of the subsidy serves to shift positively the unit elasticity demand curve of the participants, (*b*) the demand curve of the non-participants is highly elastic and shifts negatively to a

considerable extent as a result of the tax levy, and (*c*) the supply curve is horizontal (neglecting shifting).[7]

AGGREGATE EFFECTIVENESS

Primary effectiveness is the increase in outlays on Special Commodities by participants and secondary effectiveness is the increase in outlays on Special Commodities by non-participants. Since participants and non-participants comprise all consumer-buyers of Special Commodities, primary effectiveness plus secondary effectiveness equals aggregate effectiveness of the subsidy in increasing outlays on Special Commodities. (Negative effectiveness—substitution—may have to be taken into account for either group.) In table 5, column 1, it may be noted that aggregate outlays on the Special Commodities rise from $18 billions to $21.5 billions. Thus an aggregate effectiveness of $3.5 billions is obtained with a subsidy of only $3 billions. Aggregate effectiveness may be observed graphically in chart 3, figure 3, where the $3.5 billion increase is represented by the difference in size of the two rectangles. When the main direct object of a Special Purpose Money program is to aid the sellers rather than the subsidized buyers of Special Commodities, aggregate effectiveness is the figure of greatest interest.[8]

CHANGES IN OUTLAYS ON SUBSTITUTE, COMPLEMENTARY, AND INDEPENDENT COMMODITIES

Changes in outlays by participants and non-participants are not confined to Special Commodities. Although only $0.5 billions additional are spent on other than Special Commodities by the participants as a result of the subsidy program, the various groups of other commodities do not share this outlay equally well. Participant expenditures on substitute commodities decline $1.5 billions, on complementary commodities rise $2.7 billions, while on independent commodities fall $0.7 billions because of the shift in the supply curve. (See table 5, row 7.) The graphic representations of these changes are in figures 4, 7, and 10 of figure 1, chart 3.

Non-participants' outlays on other than Special Commodities also undergo changes, as may be seen in figures 5, 8, and 11, of chart 3 and in table 5. Their expenditures on substitute commodities decline by $1 billion (table 5 column 4); on complementary commodities decline $0.7 billions (table 5, column 7); and on independent commodities decline $0.3 billions (table 5, column 10).

The combined effects of participant and non-participant changes in outlays on substitute, complementary, and independent commodities are shown graphically in figures 6, 9, and 12, of chart 3. As may be noted directly in table 5, aggregate consumer outlays on substitute commodities decrease $2.5 billions, on complementary commodities increase $2 billions, and on independent commodities decrease $1 billion. These figures serve to illustrate how a change in one segment of the economy evokes repercussions throughout. All of these variations lend themselves to empirical investigation with limitations similar to those in the case of Special Commodities.

REVENUES OF SELLERS

The aggregate expenditures of consumers on all commodities naturally constitute aggregate receipts from the sale of these commodities for all the persons or firms selling them to final consumers. The total receipts of sellers, just like the total expenditures of consumers, amount to $60 billions without and to $62 billions with the Special Purpose Money program. However, the $60 and the $62 billions are not shared in the same proportions among the groups of sellers according to the illustration. Without the program the $60 billions of consumer expenditures or sellers, receipts were divided as follows among groups of sellers, or "industries": the Special Commodity industry receives $18 billions, the substitute commodity industry $20 billions, the complementary commodity industry $10 billions, and the independent commodity industry $12 billions. As a result of the subsidy program the revenues of the Special Commodity industry rise by $3.5 billions to $21.5 billions, the revenues of the substitute commodity industry drop by $2.5 billions to $17.5 billions, the revenues of the complementary commodity industry rise by $2 billions to $12 billions, and the revenues of the independent commodity industry decline by $1 billion to $11 billions. (See table 5, rows 3, 6, and 9.)

This does not mean that individual sellers in each of these industries fared better or worse in terms of gross revenues in exactly the same proportion as the industries because the increases or decreases in sales may not have been distributed proportionally to pre-program sales. In principle, it is possible to show the effects of the subsidy in increasing or decreasing the sales volume of individual sellers of Special, substitute,

[7] The measurement of secondary effectiveness requires the same type of statistical data as the measurement of primary effectiveness, but for the non-participating population rather than the participants. First, normal expenditures on Special Commodities by non-participants—the dollar outlay they would make in the absence of the tax-and-subsidy scheme—is needed. Second, the aggregate outlays on Special Commodities by non-participants while the program is in operation are required. The difference between outlays for non-participants on Special Commodities with and without the program is secondary effectiveness. (Negative secondary effectiveness may be called secondary substitution.) Normal and program outlays on Special Commodities by non-participants should be determined empirically on a sample basis. The sample should be selected in such a way as to permit comparison of secondary effectiveness among the various groups of non-participating consumers. See below chapter V, for application of this technique of analysis to the Food Stamp Plan.

[8] See below, chapter V, for aggregate effectiveness under the Food Stamp Plan.

complementary, or independent commodities. Chart 5 provides hypothetical illustrations of the situation of individual firms in each of the four industries. Figures 3, 6, 9, and 12 of chart 3 are reproduced in chart 5 as figures 2, 4, 6, and 8 in order to illustrate the relation between changes in the market situation and the individual firm's situation, in each of the four industries. As stated at the start of this chapter, the individual firm is assumed to lack any deliberate control over price, i.e., it faces a horizontal demand curve (d_1 and d_2 in figures 1, 3, 5, and 7 of chart 5). The firm's supply curves (s_1 and s_2) are the relevant portions of its marginal cost curves for the particular commodities. Figures 1, 3, 5, and 7 of chart 5 also depict the changes in the level of output for typical individual firms which remain in these industries. The improved profit opportunities in the Special Commodities and complementary commodities industries induce expansion and entry, while the reduced profit opportunities in the substitute commodities and independent commodities industries induce contraction and departure.

What is the effect of the Special Purpose Money program on firms in the higher or earlier stages of production? To the extent that the higher-stage firms provide goods and services which are specialized, i.e., their use limited to comparatively few lower-stage production purposes, they experience expansion or contraction influences in the same direction as their customers. Thus, the sellers of services and other factors to the final sellers of Special Commodities (or their suppliers) experience an increase in demand and an increase in aggregate receipts, while the suppliers of firms selling substitute commodities experience a decrease in demand and a lowering of aggregate receipts.

If the factor-supplying firms are not specialized, they can maintain approximately the same positions as to sales and output by diverting their flow of factors from the contracting to the expanding consumer goods or other relatively lower-stage industries. In other words, the less specialized are the supplying firms or the fewer the hindrances to rapid conversion, the more readily can they adapt themselves to the changes in demand for their outputs evoked by the changes in demand for finished goods by the final consumers.

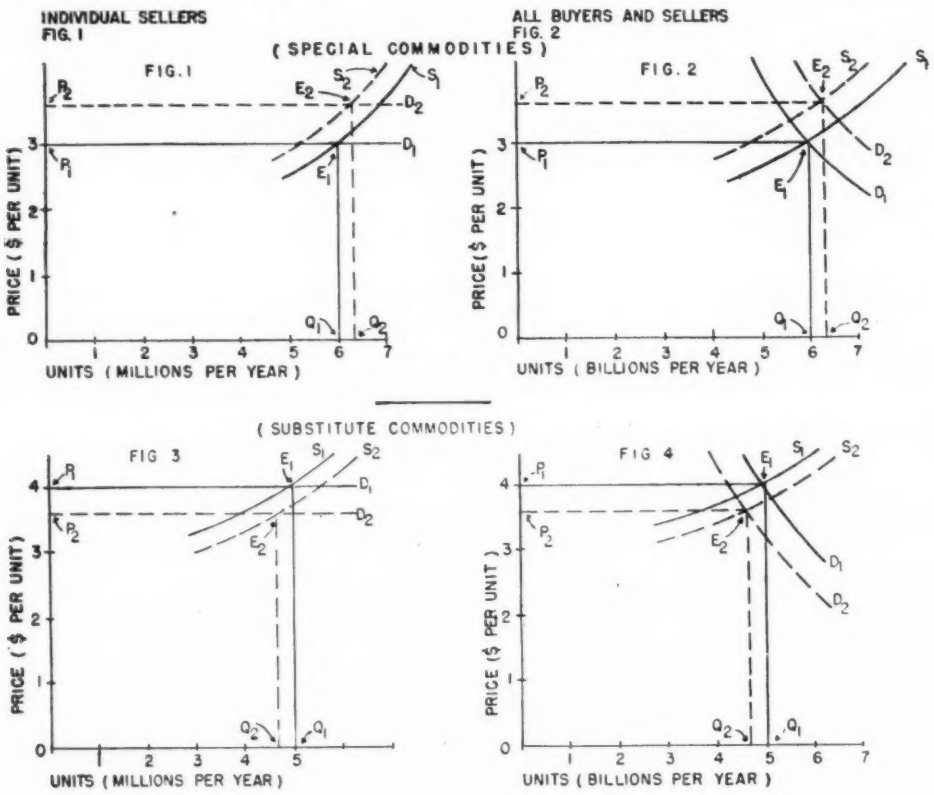


CHART 5 – CONTINUED NEXT PAGE

CHART 5 – CONTINUED

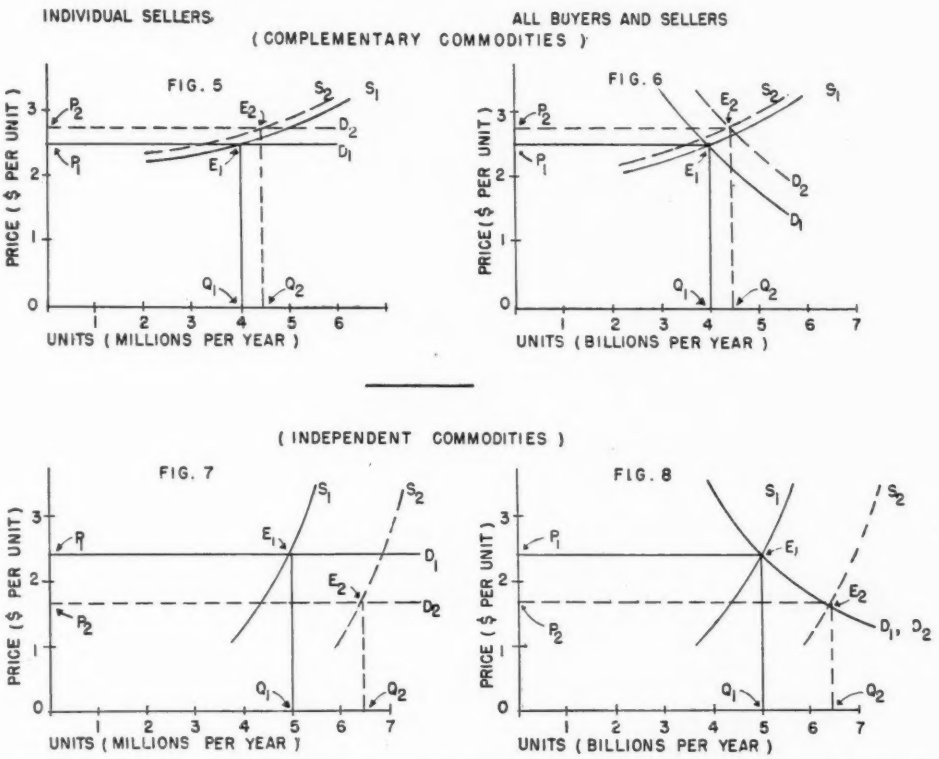


CHART 5. Effects of a Special Purpose Money subsidy on price, demand, and supply of Special Commodities, substitute commodities, complementary commodities, and independent commodities, for invividual sellers and all buyers and sellers. (Without subsidy, ————; with subsidy, – – – – –)

The effects of the subsidy on the receipts of higher-stage industries and firms can be constructed hypothetically. Let the outputs of the factor-supplying industries, whether in a parallel or chain relationship with respect to the consumer goods industries, be of four types, namely, A, B, C, and D. Suppose them to be used in different proportions in the four consumer goods industries, as shown in part 1 of table 6, so that we may expect an increase in the demand for the services of A and C and a decrease in the demand for B and D in consequence of the Special Purpose Money program. The situations of the individual firms would be similar to those in the expanding and contracting consumer goods industries, as shown in chart 5.

The rule-of-thumb method for measuring the effect of the subsidy on higher-stage producers on a statistical basis is illustrated in table 6. It is assumed that the same percentage of total receipts for a consumer commodity goes to industries A, B, C, and D when the Special Purpose Money system is in operation as when it is not. Thus 50 per cent of the receipts from the sale of Special Commodities goes for component B, but without the Special Purpose Money program this amounts to $9 billions while with the program it amounts to $10.75 billions. It is possible, of course, that the average percentage shares are not applicable and that the incremental or marginal percentage shares, which are the significant ones for present purposes, differ measurably from the average shares or ratios. In the present example, more than 50 per cent of the increased outlays on Special Commodities might have gone for component B.[9]

PRICE EFFECTS

The effects of the tax and subsidy program on the prices of consumer and producer goods and services are necessarily spread widely throughout the economy. The price effects on consumer goods, according to the example used in this chapter, are shown in table 5, columns 2, 5, 8, and 11. As a result of the Special

[9] See below, p. 176, footnote 12, for a discussion of the applicability of average and marginal ratios to the problem of determining the farmer's gains under the Food Stamp Plan.

TABLE 6

EFFECTS OF A SPECIAL PURPOSE MONEY PROGRAM ON THE GROSS REVENUES OF INDUSTRIES DIRECTLY AND INDIRECTLY ENGAGED IN PRODUCTION OF CONSUMER COMMODITIES

Consumer Commodities	Input Factors				Total
	A	B	C	D	
(1) Percentage shares for producer groups					
Special	10	50	30	10	100
Substitute	5	60	25	10	100
Complementary	5	70	20	5	100
Independent	5	80	10	5	100
(2) Without Special Purpose Money Program ($ billions)					
Special	1.8	9	5.4	1.8	18
Substitute	1	12	5	2	20
Complementary	0.5	7	2	0.5	10
Independent	.6	9.6	1.2	.6	12
Total	3.9	37.6	13.6	4.9	60
(3) With Special Purpose Money Program ($ billions)					
Special	2.15	10.75	6.45	2.15	21.5
Substitute	0.87	10.50	4.38	1.75	17.5
Complementary	.60	8.40	2.40	.60	12
Independent	.55	8.80	1.10	.55	11
Total	4.17	38.45	14.33	5.05	62
(4) Changes as result of Special Purpose Money Program ($ billions)					
Special	+0.35	+1.75	+1.05	+0.35	+3.5
Substitute	−0.13	−1.50	−0.62	−0.25	−2.5
Complementary	+0.10	+1.40	+0.40	+0.10	+2
Independent	−0.05	−0.80	−0.10	−0.05	−1
Total	+0.27	+0.85	+0.73	+0.15	+2

Purpose Money Program the price of Special Commodities rose by $0.6 per unit, from $3 to $3.6 per unit; the price of substitute commodities fell by $0.4, from $4 to $3.6 per unit; the price of complementary commodities rose $0.2 from $2.5 to $2.7 per unit; the price of independent commodities fell $0.7 from $2.4 to $1.7 per unit.

The assumed demand and supply conditions which give rise to these particular illustrative changes are shown in chart 3, especially figures 3, 6, 9, and 12. The price effects of a Special Purpose Money program tend to be greatest for Special Commodities since the participants are obligated to spend an increased portion of their increased incomes on Special Commodities, while they are free, ordinarily, to distribute their remaining cash as they wish, among the substitute, complementary, and independent commodities; and non-participants, in consequence of their reduced incomes, tend to spread the reduction in their outlays on the various types of commodities, according to their own taste patterns. It is plausible to expect the curtailment by non-participants to be spread rather widely. Elasticities and shifts both contribute to the results.

The prices of producer goods at the various higher stages of production tend to change less than the prices of consumer goods, if the factors are mobile from one use to another, but tend to change more if the factors are specialized and of inelastic supply. (Table 6 does not show price changes for producers' goods.)

PHYSICAL OUTPUT EFFECTS

The introduction of a Special Purpose Money subsidy changes the pattern of production of both consumer and producer goods. The change in the pattern of production of final consumers' goods and services is shown in table 5 and chart 3, where it may be seen that the annual output of Special Commodities increases from 6 billion units to 6.3 billion units according to the illustration. The output of substitute commodities decreases from 5 billion to 4.9 billion units. The output of complementary commodities increases from 4 billion to 4.4 billion units, and the output of independent commodities increases from 5 billion to 6.45 billion units. These changes in the output of final consumers' goods and services naturally called for changes in the outputs of producers' goods. The latter changes are implied but not shown in table 6, which shows only sales values, not prices and physical quantities.

The increases or decreases in output of the various consumer and producer goods depend on all of the other elements in the situation: the size and incidence of the tax levy and subsidy and the pre-program positions and elasticities of the end-product demand and supply curves. The taste patterns and incomes of buyers, the technical conditions of production, and the prices of the factors of production are reflected in the demand and supply curves of the end-products. It is important to observe that the subsidy calls forth the greatest increase in physical quantities of Special Commodities in response to a given size subsidy when the supply curve for Special Commodities is perfectly elastic, since no part of the increased outlays is drained off by a higher price per unit.

EFFECTS ON MONEY INCOME OF CONSUMER INCOME-GROUPS

The most direct effect of the illustrative Special Purpose Money program on the incomes of participants and non-participants as groups is the transfer of $3 billions from the non-participants (as taxpayers) to the participants (as subsidy receivers). Total con-

TABLE 7

CONSUMER INCOME, CONSUMER OUTLAYS, AND CONSUMER INVESTMENTS, WITHOUT AND WITH THE SPECIAL PURPOSE MONEY PROGRAM, AND TAXES OR SUBSIDIES, BY INCOME-SIZE GROUPS OF CONSUMERS

(All dollar figures in billions per year)

Consumer Income Receivers	Without Program			With Program			Tax (−) or Subsidy (+)		Secondary Income Shifts[a]
	Consumer Income	Consumption Outlays	Investment Outlays (Savings)	Consumer Income	Consumption Outlays	Investment Outlays (Savings)	$	% of (1)	$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Highest Tenth	$25	$11	$14	$23.1	$10.4	$12.7	$−1.9	−7.6	$−0.1
9th Tenth	11	8	3	10.5	7.9	2.6	−0.5	−4.5	−0.2
8th Tenth	9	7.5	1.5	8.7	7.4	1.3	−0.3	−3.3	−0.2
7th Tenth	8	7	1	7.8	6.9	0.9	−0.2	−2.5	−0.2
6th Tenth	7	6.5	0.5	6.9	6.4	0.5	−0.1	−1.4	−0.3
Subtotal: Upper 5-tenths	$60	$40	$20	$57	$39	$18	$−3	5	$−1
5th Tenth	6	6	0	6.2	6.2	0	+0.2	+ 3.3	+0.3
4th Tenth	5	5	0	5.4	5.4	0	+0.4	+ 8.0	+0.2
3rd Tenth	4	4	0	4.6	4.6	0	+0.6	+15.0	+0.2
2nd Tenth	3	3	0	3.8	3.8	0	+0.8	+26.7	+0.2
Lowest Tenth	2	2	0	3.0	3.0	0	+1.0	+50.0	+0.1
Subtotal: Lower 5-tenths	$20	$20	0	$23	$23	0	$+3	15	$+1
Total	$80	$60	$20	$80	$62	$18	0	—	0

[a] Further changes in column 4 which would occur if program were continued for some years. See text for discussion.

sumer income remains the same at $80 billions. Consumption goods expenditures of non-participants fall from $40 to $39 billions and those of participants rise from $20 to $23 billions, so that total consumption goods expenditures rise from $60 to $62 billions. Non-consumption expenditures, made solely by non-participants, fall off $2 billions from $20 to $18 billions.

In table 7 and chart 6 are shown the effects of the program on the distribution of income among consumer units, divided into tenths from lowest to highest income-receivers. The distribution of income existing in the absence of the subsidy program (table 7, column 1) is approximately correct (in percentage terms) for the United States in 1941. Note (table 7, column 8) that the taxes to pay the illustrative subsidy are raised entirely from the upper five-tenths of the income-receivers and that the tax rates are progressive—taxes as a percentage of income rise with rising income. Note also that all participants are in the lower five-tenths, although all consumer units in these groups are not necessarily participants. The subsidy contribution is also progressive—increasing with decreases in income—as among the different income groups of consumer units.

The illustration used throughout this chapter has shown only what might be called the direct or primary effects of a Special Purpose Money tax and subsidy program. These effects might emerge in a year or two. Indirect effects would take longer to make themselves felt in all the elements discussed. By way of further development of the illustration, possible secondary effects of the program on income distribution may be indicated. Less inequality of income should contribute toward increased competition among the members of consumer units in their capacities as producers of goods and services and hence bring about still less inequality. For example, it would not be unreasonable to suppose that the lower five-tenths of the income receivers could use the additional $3 billions to make themselves better competitors vis-à-vis the upper five tenths of the income receivers and thus raise their share of the annual income from $23 out of $80 billions to say $24 out of $80 billions. Such a result might occur after a few years of such a program when the effects of better education, better health, greater geographic mobility, and similar factors would have sufficient time to be felt. This further shift in the distribution of income might be called the "secondary shift" as distinguished from the primary or direct shift. (See table 7, column 9 for an example. These changes in the distribution of income among the tenths of income-receivers are also illustrated by means of Lorenz curves in chart 7.) The curves show the cumulative percentages of total consumer income received by corresponding cumulative percentages of consumer income receivers, ranked according to size of income from lowest to highest. Curve 1 shows the situation without the subsidy program, curve 2 the situation with the subsidy pro-

XUM

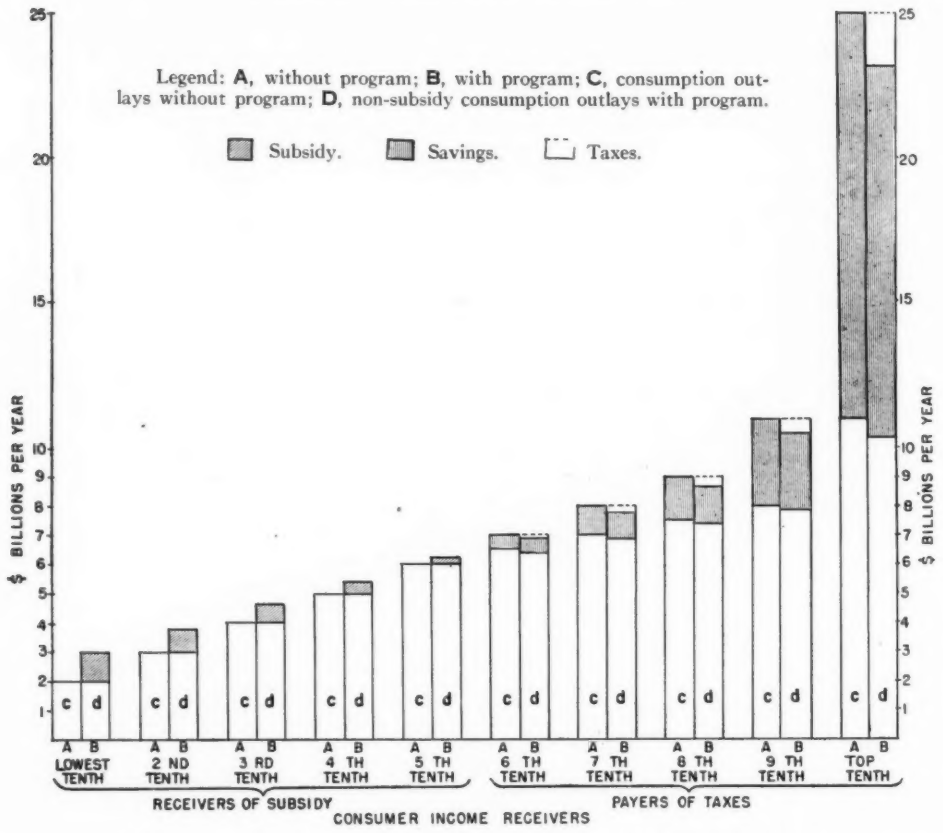


CHART 6. Effects of Special Purpose Money program on distribution of income among consumer income receivers.

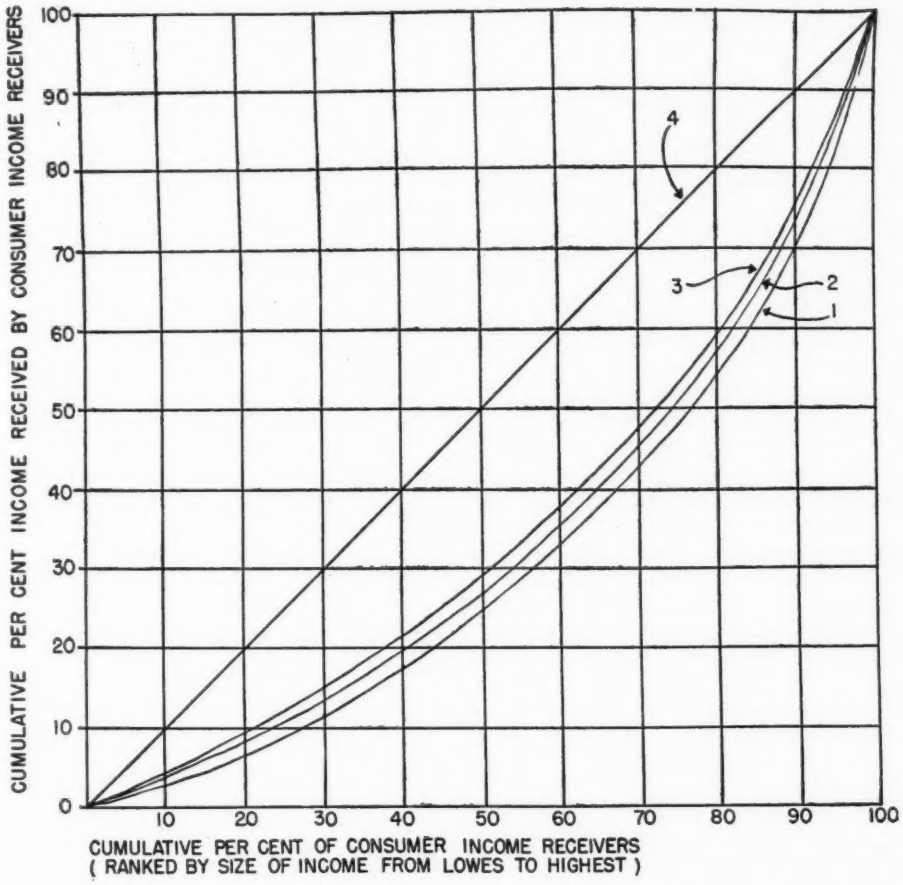
gram but taking into account only the primary shift, curve 3 the situation with the subsidy program but taking into account both the primary and secondary shifts, and curve 4 shows the graphic counterpart of a perfectly equal distribution of income among consumer units. For example, the lowest 30 per cent of the consumer units receive only 11 per cent of the total income without the Special Purpose Money program, but with the program receive 14 per cent from the primary shift, and 16 per cent from the primary and secondary shifts combined.

EFFECTS ON WELL-BEING OF CONSUMER INCOME-GROUPS

Let us consider the effects of this program on the essential welfare or well-being of the people affected. It is convenient to think of income on three levels: money income, real income (goods and services received), and satisfaction income. We ordinarily understand the central purpose of economic activity to be the increasing of satisfaction income ("utility," interpreted in a broad and loose sense), or in other terms, the raising of "psychic status."[10] We also take for granted a positive but by no means perfect correlation between any pair of these three types of income. Thus satisfaction income depends to some extent upon material well-being as represented by real income in goods and services. Money income is the prime requisite for obtaining real income, since the opportunities for home production are quite circumscribed in these days of extreme specialization and the volume of real income provided "free" by government is comparatively small.

Most of the money income of consumer units is received in payment for goods or services tendered by members of the consumer units, but some of it is obtained from gifts or subsidies. Increases in total money income usually increase real income and satisfaction income, regardless of the source of the money income. Hence the receipt of an additional $3 billions by the participants in the illustrative Special Purpose Money program discussed in this chapter enables them

[10] See appendix B for analysis of effects on an individual participant by means of the indifference curve technique.



Legend: 1, without program; 2, with program (primary shift only); 3, with program (primary and secondary shift); 4, equal distribution.

CHART 7. Lorenz curves showing the effect of the Special Purpose Money program on the distribution of income and consumer units.

to buy larger quantities of goods and services which in turn satisfy their wants or felt needs more fully than before. If the participants dispose of this increment to their economic power according to their best lights, or according to accepted high standards, they may enjoy improved health, a greater variety of goods and services, a new range of experiences, and enlarged opportunities to develop their capacities. If such negative features as dependence on government and submission to a "means test" (being declared eligible on the basis of investigation) do not offset the positive features, they are in a better position to seek "the good life," whatever its specific content. Their psychic status is raised. This improvement must be attributed principally to the subsidy rather than to the Special Purpose Money technique *qua* technique. If free consumer choice represents a "higher good" than somewhat restricted choice, then the Special Purpose Money plan reduces psychic status below what it would be with an unearmarked subsidy. However, the latter is an inaccessible alternative under the usual conditions which would prompt the employment of Special Purpose Money, namely, when certain suppliers are having great difficulty in selling their wares.

Just as the subsidy tends to raise the level of well-being of the participants, so does it tend to lower the level of well-being, or at least the economic power, of the non-participants. In the illustration used here the reduction in their total money income by $3 billions tends to mean a reduction in real income (present or future, depending on whether the tax funds are taken from consumption of non-consumption sources), and in turn a lowering of satisfaction income.

EFFECTS ON OPERATION OF ECONOMY

Finally, we must consider the Special Purpose Money system as a means of fostering a smoothly

functioning economy. Can this device be employed to foster regular employment of people and things? To the extent that the continuous operation of the economy depends upon consumers spending their incomes completely and regularly on consumption goods and services, the Special Purpose Money program, if financed by highly progressive taxes, is a step in the right direction because it transfers funds from people with a relatively low to those with a relatively high propensity to consume. However, variations in the level of economic activity can rarely be said to stem from a change in the disposition of the vast proportion of people to spend whatever incomes they have for consumption purposes: they almost always spend nearly all they have. More important in generating downswings and upswings seem to be the decisions, governed so largely by the current state of anticipations or expectations regarding future profit opportunities, of the firms financing and turning out producer goods and services. These decisions affect the incomes of consumers and hence their volume of spending. A Special Purpose Money program may stabilize or improve the profit expectations and actual profit opportunities of producers of some commodities and their suppliers for some while, but may evoke a deterioration of profit anticipations and actual profit opportunities for other groups of producers and their suppliers. Government fiscal policy and production and distribution programs generate similar direct effects. The central points of this brief discussion of the business cycle are two: that there are other causes of prosperity and depression than the level of consumer outlay, and that an increase in consumer outlay, although it almost certainly will help, cannot be relied upon to transmute depression into permanent prosperity.

CONCLUSIONS REGARDING EFFECTS

We have analyzed, with the aid of an illustrative $3 billion annual program, an $80 billion annual national income, and various other fairly realistic assumptions, the effects of the Special Purpose Money device on the economic system. Only the direct effects were considered carefully; the more roundabout or remote effects were neglected. This analysis may be summarized readily. Primary effectiveness—the increase in participants' outlays on Special Commodities—amounted to $2.5 billions; substitution was thus $0.5 billions. Secondary effectiveness—the increase in non-participants' outlays on Special Commodities—amounted to $1 billion; it was positive rather than negative because the negative shift in the non-participants' demand curve for Special Commodities was slight and because this demand curve had an elasticity of numerically less than -1.0. Aggregate effectiveness—primary plus secondary—was $3.5 billions, or $0.5 billion in excess of the subsidy of $3 billions.

Changes in outlays by participants and non-participants combined on other than Special Commodities—substitute, complementary, and independent commodities—were as follows: a decrease of $2.5 billions on substitute commodities, an increase of $2 billions on complementary commodities, and a decrease of $1 billion on independent commodities. The revenues of groups of sellers of the four classes of commodities obviously rose or fell by the same amounts as consumer outlays although total sales, like total consumer outlays, rose from $60 billions to $62 billions as a result of the decline in "investment-saving" from $20 billions to $18 billions. Producers of producer-goods experienced smaller shifts in receipts, according to the example.

Prices of Special Commodities and complementary commodities quite naturally rose, while prices of substitute commodities fell. The prices of independent commodities were taken to fall, on the assumption that the supply curve shifted positively while the demand curve held constant. The physical output effects were as follows: output of Special Commodities rose, as did the output of complementary commodities; the output of substitute commodities understandably fell; the output of independent commodities increased in spite of the decline in price because of the positive shift in the supply curve.

The distribution of income shifted slightly in favor of the poorer consumer income-groups as a result of the progressive rates of taxation and the "progressive" rates of subsidy contribution. For example, the incomes of the highest tenth of the income receivers were reduced by 7.6 per cent while the incomes of the lowest tenth of the income-receivers were increased by 50 per cent. It was estimated that non-consumption outlays would be reduced from $20 to $18 billions, that is, $2 billions of the $3 billions tax would come from savings or investments rather than from consumption.

The effects on the operation of the economic system were judged to be these: that the transfer of funds from the upper half of the income receivers to the lower half of the income receivers would probably have a tendency to make the economy function slightly more smoothly, but that economic fluctuations could not be eliminated simply by application of such an equalitarian measure.

But how realistic has been this discussion? Can we legitimately suppose that highly competitive conditions prevail in the various markets? Can we legitimately assume that a program of this type can be financed by means of taxes (particularly progressive taxes) or by means of bonds to be paid off by such taxes without much delay? Aside from queries concerning the construction of the illustration used here, these two appear to be the main questions which should be raised.

It is certainly true that most actual markets, con-

sumer as well as producer, are imperfectly competitive. Many are highly monopolized or cartelized. How much difference would this make in the results of the program? The results of any particular change in the economy are much more difficult to anticipate when markets are non-competitive, but in general the principal differences would probably be these: production would be smaller, price increases greater, and the secondary income equalization tendencies weaker.

Somewhat different results would also be obtained if the $3 billions in subsidy funds were provided by "issue," i.e., by coinage of metal, printing of paper money, or expansion of deposit credits on the books of banks The results of this method of financing may be indicated with reference to chart 3. We may suppose that the participants' demand curves for the four types of commodities increase as shown and that the non-participants' demand curves remain the same as before the program. What of the supply curves? The tendency would be for the supply curves to shift negatively as the increased volume of money tended to push up prices although this result might be delayed by the presence of idle factors of production, so that additional outputs of consumer goods and services would be available for some while in accordance with the original supply curves in chart 3.

It is tempting to think that after the initial spurt outputs and relative prices of commodities and factors would be the same as under regular tax financing, but such cannot be expected. "Issue" or "deficit" financing does not result in a progressive incidence on income receivers with respect to real income; it is regressive or at best proportional because poor people are generally in weak bargaining positions as compared with those with higher incomes. Issue financing also has a strong tendency to upset the relative price structure and thus affect the profit anticipations of producers, particularly in the producer goods field. The threat of or actual depreciation of the value of money almost certainly causes savers to devote more of their funds to current consumption and thus sets off the elaborate train of consequences described under the heading of "inflation." If issue-financing is utilized under highly imperfect competitive conditions, persons in strong bargaining (relatively non-competitive) positions are able to raise the prices (or wages or rents) of what they have to sell, whereas, most people, as unorganized wage-earners, small businessmen, and unorganized farmers, are unable to push up their rates rapidly, if at all.

In general, it seems correct to state that non-competitive market conditions and issue financing make the Special Purpose Money subsidy somewhat less effective in benefiting the participants than competitive market conditions and progressive tax financing. Similarly, the benefits to sellers of Special Commodities tend to be less diffused.

NOTE ON LONG-RUN EFFECTS OF PROGRAM ON PRODUCTION

The mildly equalitarian cast of any likely Special Purpose Money program warrants our examining certain of the longer-run economic implications of greater equality of income distribution. Quite aside from the possible effect on total output, approximately complete equality would not necessarily increase the general welfare of the community. Maybe some people can obtain more satisfaction—or more "good," in whatever specific terms—from a given amount of income than can others. However, for any degree of equalization likely to be realized, this argument would appear to be of minor significance.

It is more important to consider the effects of more equal incomes on the volume of production. Will the total volume of consumers' goods and services, present or future, be significantly affected by a somewhat lessened inequality? A reduced (or increased) total volume could offset, in welfare terms, the gains (or losses) from lessened inequality. Three serious arguments are usually advanced in support of the contention that the aggregate physical volume of consumption goods and services would be reduced in the near or distant future if incomes were brought into approximate equality. One is that not enough money would be saved to make possible sufficient production of capital goods and extensive training of persons to maintain the output of consumer goods and services. The second is that people would hesitate to risk their land and equipment and their loanable or investable funds in production ventures. The third is that the lack of the opportunity to obtain large incomes would cause people to work less efficiently and less diligently. (It is sometimes argued that ultra-rich persons are needed to set the cultural tone and pace for the community. Less seriously it is also occasionally argued that rich people must be assured a large inflow of money from the population generally so that they, the rich people, may be the principal taxpayers.)

Although no conclusive demonstration of the validity or invalidity of these three main arguments can be brought forward, there is considerable evidence that sufficient savings, risk-bearing, and labor can be provided with much less inequality in the distribution of personal incomes than now prevails. It is almost certain that the volume of personal voluntary savings would decline, at least temporarily, but such savings have not been a large part of the total in recent decades. Much more important in providing investible funds have been the plowing back of business profits, the funds accumulated by insurance companies, the funds provided by government from taxes or by issue, and the funds "created" by banks.

As for the second argument, it is becoming increasingly evident that government is going to have to furnish most of the really risk capital in the coming years. There is nothing in recent history to indicate

XUM

that private investors are going to be willing to provide sufficient funds, on a strictly private basis, for investment abroad, housing, and other urban developments, a remodelled transportation system, electric power, irrigation, and conservation developments, to mention some of the main fields of needed investment from a general point of view. Various factors combine to discourage voluntary, especially direct (that is, equity rather than debt) investment by private persons: government regulation of corporate financial and other activities; extreme government control over foreign exchange, trade and investment generally; increased power of labor, farmer, and consumer groups; the large-scale development of nation-wide and world-wide combinations or cartels; and the great volume of direct government action in the economic sphere, quite aside from the war and its aftermath. It is to be hoped that private investors, and particularly the policy-makers of corporations, will recover their courage; excuses can always be found for not risking funds in productive enterprises. But the more the private enterprisers hold off the larger must be the scope of governmental action.

As for the third argument, it can scarcely be doubted that there is some connection between the quantity and quality of work on the one hand and the level of remuneration on the other. However, the connection becomes very vague as a "certain" level of income is reached. For example the upper 5 per cent of the income receivers in the United States may be worth every penny paid them or more, in terms of their contribution to production, but it may be doubted whether they require the size incomes they get in order to induce them to perform the work they do. They want to be high in the prestige scale, to be sure, so, as long as very large incomes which enable them to climb in that scale can be obtained, they will seek them.

The upshot of this discussion seems to be that a Special Purpose Money program of this size and type, utilized during depression, constitutes no long-run hazard for the United States. Positively, it makes the poor people better off currently and tends to set in motion forces which raise the general level of economic activity in the community.

V. EFFECTS OF THE FOOD STAMP PLAN

The Food Stamp Plan had a variety of effects, which we shall examine according to approximately the same categories used in the preceding chapter in analyzing the effects of an imaginary Special Purpose Money program. The discussion in this chapter relates primarily to the calendar year 1941, when the amount spent on the Food Stamp Plan was $100,000,000, the largest amount spent on the Plan during any year of its four-year existence. Some of the effects are not discoverable statistically because of the small size of the subsidy, but tendencies can be noted.

PRIMARY EFFECTIVENESS

Strictly interpreted, the primary effectiveness of the Food Stamp Plan is the extent to which the blue stamp grants result in increased outlays by participants on blue stamp foods, individually and in the aggregate. However, in the light of the structure of the Plan, the increase in outlays by participants on blue stamp foods should not be taken as the sole element of primary effectiveness. It will be recalled that the structural defect—by which normal expenditures on blue stamp foods are frozen into orange stamps instead of purchased blue stamps—permitted the substitution of blue stamp expenditures for normal cash expenditures on blue stamp foods and thus released orange stamps for expenditure on other than blue stamp foods. Since this defect was known to the SMA administrators, and was structurally implicit in the Stamp Plan, it seems proper to treat as primary effectiveness the increases in participant outlays on both Special Commodities and close substitutes, namely, on both blue stamp foods and other foods. Therefore, the primary effectiveness of the Food Stamp Plan is taken to be the increase in expenditures on all foods by participants. With this broad interpretation of effectiveness, substitution means only the increases in non-food expenditures attributable to the subsidy, or in other terms, the subsidy less effectiveness.[1]

In calculating the effectiveness of the Stamp Plan, it is important to distinguish between the effectiveness of the Stamp Plan as a special technique for distributing the subsidy and the effectiveness of the subsidy as such. There is a good basis for believing that eligibles would have spent on food approximately 45 per cent of any increase in income.[2] Consequently, the success of the Stamp Plan as a special administrative technique should be judged according to the effectiveness above the 45 per cent yield which could have been achieved by means of a straight cash subsidy. It is more convenient, nevertheless, to use the total increase in food outlays by participants as the measure of primary effectiveness, except when contrast with the effectiveness of a cash subsidy is of particular interest.

If all blue stamps issued or redeemed represented increased outlays on foods of all types by participants, primary effectiveness would be easy to calculate, both in the aggregate and for particular commodities. But some substitution occurred. How much? Stated

[1] Primary effectiveness for blue stamp foods only would be approximately one-third of primary effectiveness for all foods.

[2] According to *Consumer expenditures in the United States*, *op. cit.*, 23, families receiving less than $500 per year had average incomes of $466 and spent $203 on food, while families receiving $500–750 per year had average incomes of $707 and spent $310 on food. Thus $107, or 44.4 per cent, of the income increment went for food. The fraction spent on food does not fall below 40 per cent of total income until income exceeds $1,000, according to this study.

positively, what was the actual primary effectiveness of the stamp subsidy? Unfortunately, and in spite of operations extending over nearly four years, reliable estimates of effectiveness were calculated for only a few areas. According to admittedly limited data, 69 per cent of the blue stamp dollar went for increased food expenditures among participants in the northeastern region (New England and Middle Atlantic States) in 1941. A study made in early 1942 showed, however, that the plan was 80 per cent effective in New York City. This high rate of primary effectiveness was generally attributed to good welfare standards and administration. Since New York City received nearly one-half the blue stamps issued in the northeastern region, it follows that the remainder of the region had an average effectiveness of 55–60 per cent. A study of effectiveness in Baltimore in late 1941 revealed an average leakage of 40 per cent, or an effectiveness of 60 per cent.

The overall effectiveness of the program has not been estimated for the other regions of the country, but there is no reason to believe that the results were any better, on the average, than in the Northeast. Primary effectiveness in the South was probably not far above the 45 per cent yield obtainable with a cash subsidy, so the *national average was probably 60-some per cent.* Thus with blue stamp issuance in calendar 1941 at $100,000,000, primary effectiveness may be estimated at $60,000,000. Since approximately $300,000,000 ($100,000,000 blue and $200,000,000 orange stamps) was spent on food by participants in 1941, their normal food expenditures—in the absence of the Plan—would have been about $60,000,000 less, namely, $240,000,000.

Effectiveness tended to increase with size of family, according to sample studies in the Northeast. The blue stamp subsidy to single-person families (23 per cent effective) failed almost completely to bring about increased food expenditures. In contrast, leakage was unimportant for families of seven or more (89 per cent effective). It is also fairly clear, on the basis of the limited information, that effectiveness decreased with increases in income, within a given family size. Empirically-supported explanations of these variations in effectiveness among family size and income groups are not available.

Effectiveness varied greatly for different foods (blue stamp foods and others) considered individually. According to one survey, it ranged from below zero (cabbage) to as much as 100 per cent (apples).[3] Hence, placing particular commodities on the blue stamp list did not necessarily mean that expenditures on them would increase significantly, if at all, since the participants had full freedom of choice among the blue stamp foods.

[3] Below zero effectiveness for a commodity means that outlays on it actually decreased with the coming of the subsidy; it may also be described as negative income-elasticity for the commodity.

Owing to the structural defect, which permitted normal blue stamp food expenditures to be frozen into orange stamps instead of blue, and the nature of the taste patterns of the participants, the participants' aggregate expenditures on blue stamp foods showed no greater percentage increase than did their expenditures on other foods. Blue stamp foods made up the same fraction of total food outlays for participants as for non-participating eligibles.[4] This fraction was approximately one-third during most of 1941–1942 although there were some changes in the blue stamp list during this period. It may again be observed that the SMA incurred unnecessary trouble and expense by employing two types of stamps.

FACTORS AFFECTING PRIMARY EFFECTIVENESS

The causes of substitution—the factors affecting primary effectiveness—may be reduced to four types, listed according to their estimated importance for the country as a whole in 1941:

(1) Too-low orange stamp purchase requirements: (*a*) improper schedule of purchase requirements and/or (*b*) improper certification of eligibles with reference to this schedule;
(2) Noncompliance with expenditure-redemption rules by participants and food dealers;
(3) Reduction in assistance grants or other income of eligibles with coming of Stamp Plan; and
(4) Noncompliance with the orange stamp purchase requirements: (*a*) below-minimum purchases in any one period and/or (*b*) intermittent participation from period to period.

This ranking of the causes of leakage might not apply to every area, of course, and might change from one period to another, but the $40,000,000 estimated leakage for calendar 1941 can be attributed to these four causes in this order with reasonable confidence. Not enough evidence is available to permit assignment of actual quantities of leakage to each of the causes.

Any one of these four sources of substitution could cause extremely unfortunate consequences. For example, a schedule of too-low purchase requirements could reduce effectiveness to the estimated 45 per cent which would be obtained under a strictly cash subsidy, even though the other sources of leakage—improper certification, non-compliance with expenditure-redemption rules, reduction in income of eligibles, and non-compliance with purchase requirements—were completely stopped up. This would result because no restraints would be placed on the normal expenditure inclinations of the participants. The same disastrously high substitution could arise from improper certification of eligibles (errors on the side of too-low

[4] Even for individual foods the relationship holds; in Baltimore in late 1941 the coefficient of correlation (r) was + 0.992, which may be exceptional. Other studies bear out the conclusion, however.

XUM

incomes or family sizes), with all the other causes of substitution inoperative; likewise, for noncompliance with expenditure-redemption rules or purchase requirements. In other words, the effectiveness of the program as a special technique could have been wrecked by any one of these substitution-determinnants (except reduction in income of participants) operating full force. Joint operation of these forces, even though in limited degree, could bring about the full substitution effect.

The situation is a bit different, however, with respect to the third determinant of substitution, the reduction of other income of eligibles with the introduction of the Stamp Plan. If, after the Stamp Plan had been established and was functioning perfectly with respect to all the other three substitution-governing factors, relief authorities began to reduce the grants to their cases, or if suppliers of funds to non-relief cases curtailed their payments, the eligibles and the relief administrators would be disposed to make strong efforts to get the orange stamp purchase requirements reduced. This might at first take the form of requests for certification of eligibles into lower income groups, but the relief administrators could almost certainly be counted upon to plead for a lower schedule of orange stamp purchase requirements in order that more of the clients' incomes could be released for non-food expenditures. A cut in relief payments without recertification or without reduction in scheduled orange stamp purchase requirements would be almost certain to result in non-compliance with the expenditure-redemption rules and with the orange stamp purchase requirements. Reduction in payments to eligibles tended, therefore, to nullify the main aims of the Stamp Plan: SMA funds were simply substituted for other sources of income. Effectiveness tended, under these circumstances, to fall even below the cash subsidy level of 45 per cent.

To sum up, it is approximately correct to say that the Food Stamp Plan was successful in obtaining some 60 per cent—perhaps higher, perhaps lower—primary effectiveness. This was obviously better than the 45 per cent that a straight cash subsidy would have yielded. Could much more than 60 per cent primary effectiveness reasonably have been expected? Yes: It was possible for the Food Stamp program to average 80–90 per cent effectiveness in distributing the same size subsidy to the same income-family size groups that it was assisting.[5] The reasons for positing this high potential effectiveness are as follows: relief payments were cut in some places; certification was poor in a great many places; the orange stamp requirements were almost invariably too low; there was some intermittent participation and under-issuance; the blue stamp contributions were not adjusted to relative needs of participants; compliance with the expenditure rules was far from perfect; education of clients, welfare workers, and grocers was sporadic and casual. All of these causes of relatively poor performance could have been removed in considerable part, especially where state and local welfare systems were moderately good. Then, in spite of some evident leaks, 80 per cent primary effectiveness was actually obtained in New York City. This performance is perhaps the best proof of the workability of the Food Stamp Plan.

[5] The fact that families of the same size and income spend different amounts on food but have to be given the same treatment under the Plan for administrative reasons necessarily causes some substitution. See appendix A for detailed discussion.

SECONDARY EFFECTIVENESS

Secondary effectiveness of the Food Stamp Plan is the increase in outlays on food by non-participants, whether eligible or not. Secondary effectiveness is estimated at $10,000,000 for the calendar year 1941. The method of determining this sum is discussed in the section on "effects on aggregate sales."

AGGREGATE EFFECTIVENESS

Aggregate effectiveness of the Food Stamp Plan in 1941 is primary effectiveness ($60,000,000) plus secondary effectiveness ($10,000,000), or $70,000,000. Thus aggregate effectiveness was 70 per cent of the total subsidy outlay of $100,000,000 for the year.

CHANGES IN OUTLAYS ON SUBSTITUTE, COMPLEMENTARY, AND INDEPENDENT COMMODITIES

The SMA made occasional sample studies of all expenditures of eligibles, including participants, before and after the introduction of the Stamp Plan, but no reports are available on changes in expenditures on commodities or services other than food. The estimated $40,000,000 primary substitution for 1941 would tend to be spread over so many different commodities that the effects would be difficult to determine statistically.

Even less appreciable would be the effects of the $10,000,000 secondary effectiveness on the outlays on non-food items by non-participants. It is necessary to conclude that the changes in non-participants' outlays on these other commodities as a result of the Stamp Plan were imperceptible.

EFFECTS ON AGGREGATE SALES, PRICE, AND QUANTITY OF FOOD SOLD

That effect of the Stamp Plan which most interested the sellers of food was the increase in their money receipts, i.e., aggregate effectiveness viewed from the sellers' side of the market. This effect is measured by the increase in participants' food expenditures, plus changes (positive or negative) in food outlays by non-participants (eligible and non-eligible).

Although the SMA did not make a successful statis-

tical study of the effects of the Plan on prices, quantities sold, and gross revenue of food sellers,[6] an estimate is attempted here. The greatest difficulty is that other variable factors overshadowed the blue stamp subsidy. In 1941 consumers bought $12,400,000,000 worth of food from retail food dealers in the United States, according to the Department of Commerce.[7] The value of blue stamps issued was about $100,000,000, and apparently only $60,000,000 of this amount represented additional food purchases by participants. This $60,000,000 increment to food outlays is obviously only a tiny fraction—one-half of one per cent—of the national retail total of $12,400,000,000. Additional outlays attributable to the Stamp Plan probably did not exceed 3 per cent of the national total for any one commodity. These fractions were higher, of course, for many areas in which the Stamp Plan operated, but the food markets of the country are so interrelated and the sellers so widely distributed that it is impossible to calculate price and income effects on any regional or area basis.

Accordingly, if we would learn the effect of the Stamp Plan on the quantity of food sold, the average price of food, and the gross receipts of food sellers, we must combine our limited factual knowledge with some plausible assumptions. Sellers of food obviously obtained the estimated additional $60,000,000 spent by participants in 1941. But how did the non-participants behave? Did they spend the same amount they would have spent in the absence of the Stamp Plan, or did they spend more or less? And if more or less, how much? What part of the change was due to changes in the prices they paid and what part to changes in the quantities they bought?

To answer these questions, we must make several simplifying assumptions. We shall treat all food as a single commodity. We shall assume that competitive conditions prevailed among the various buyers and among the various sellers in the consumer goods markets and in the producer goods markets involved; that the subsidy funds were raised entirely from the non-participant population by means of taxes, and that the incidence of the taxes are entirely upon non-participants (neglecting more remote effects).

The following additional conditions are implicit in the curves in chart 8 with respect to the six determinants of aggregate effectiveness, change in price, and change in quantity sold:

(1) The participants' demand curve for food shifts positively to the extent necessary to increase gross food expenditures by participants by $60,000,000, from $240,000,000 to $300,000,000.

(2) The participants' new demand curve has a constant elasticity of − 1.0, thus presuming all food to be purchased with orange and blue stamps.[8]

(3) The non-participants' demand curve for food does not shift. (The imposition of the taxes would tend to bring about a negative shift in their demand curve, but the levy is so small that its effects may be neglected. The nutrition interest stimulated by the Stamp Plan would also tend to shift this curve positively.)

(4) The elasticity of the non-participants' demand curve for food is set at a constant of − 0.7 over the relevant range. (The elasticity of the combined demand curve for participants and non-participants is about − 0.71.)

(5) The supply curve for food does not shift because of the relatively small size of the subsidy and the roundaboutness of its effect on the supply curve.

(6) The supply curve is given a constant elasticity of + 1.0 over the applicable section of the curve.

The sixth is probably the most debatable of these assumptions; and it is very important. A perfectly elastic supply curve would mean no change in price in consequence of the subsidy and would leave the net effectiveness for sellers the same as the primary effectiveness of $60,000,000. Both participants and non-participants would pay the same price as before and the subsidy would result in the largest increase in physical volume of food obtainable under these assumptions listed above. This is the result most favorable for all consumers of food since they do not have to pay higher prices for food and the subsidized consumers are able to buy more food than before. At the other extreme, a perfectly inelastic supply curve would bring the maximum increase in price and the maximum revenue obtainable under the posited demand conditions (nearly $100,000,000 increase in gross revenue, including just over $60,000,000 primary effectiveness, as will be explained presently).

Between these two extremes lies the truth as to elasticity of the supply curve for food. Lacking fuller information, an elasticity of supply of + 1.0 (amount offered rising proportionately with price) is assumed.

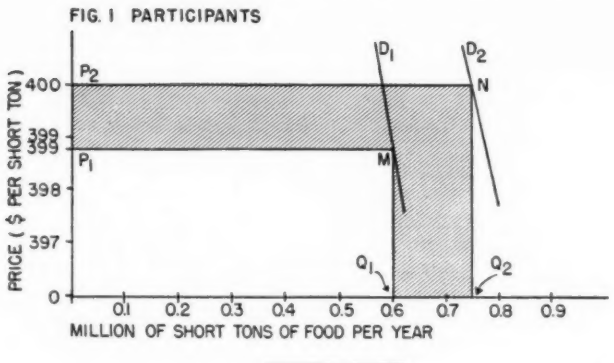
Using these several assumptions, we are able to calculate that the effect of the Stamp Plan in 1941 was to increase the average price of food sold at retail from approximately $399 to $400 per ton (or by about one-fourth of one per cent) and to increase physical volume sold by about 90,000 tons (or by about one-

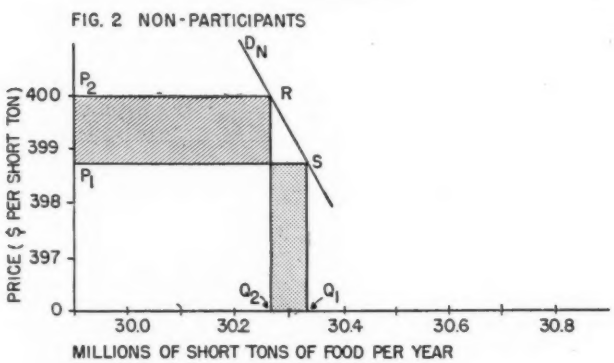
[6] See Gold and others, *op. cit.*, 91–96, for a description of attempts to measure these quantities statistically.

[7] This figure excludes the value of home-grown food and food moving through other than retail food stores.

[8] It seems plausible to assume that total participant food outlays are represented by the $200,000,000 of orange stamps plus $100,000,000 of blue. Substitution has already been allowed for in supposing $60,000,000 primary effectiveness.

XUM





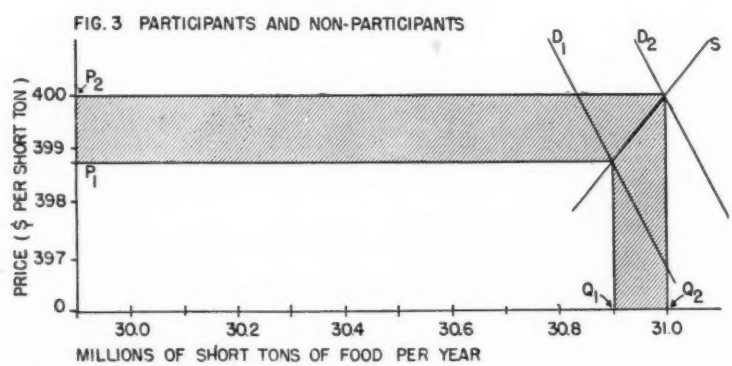


CHART 8. Effects of Food Stamp Plan on price of food, quantity of food sold, and gross revenues of retail sellers of food in 1941, for (1) participants, (2) nonparticipants, and (3) all final consumers combined.

P_1 in each figure is the price without the Stamp Plan and P_2 the price with the Stamp Plan; Q_1 the quantity without and Q_2 the quantity with. Note that the quantity taken by non-participants declined. The areas in the figures do not depict the correct relative magnitudes involved.

Participant demand curves are assumed to have an elasticity of -1.0; the nonparticipants' demand curve is assumed to have an elasticity of -0.7; the combined demand curves have elasticities of apprxoimately -0.71. The supply curve (S) for food is assumed to have an elasticity of $+1.0$. Further comments on each of the three figures follow:

(1) Participants: The demand curve D_1 shows the amounts of food participants would buy at various prices *without* the Stamp Plan and the demand curve D_2 shows the amounts of food participants would buy at various prices *with* the Stamp Plan. The hatched area shows the additional aggregate payments ($60,000,000) made by participants for food as a result of the Stamp Plan, with the price at $398.85 per ton before and $400 after.

(2) Non-participants (including all non-eligible as well as non-participating eligibles): The demand curve D_n shows the amounts of food non-participants would buy at various prices *with and without* the Stamp Plan. The hatched area minus the bar area indicates the change in the aggregate payments ($10,000,000) made by non-participants for food as a result of the Stamp Plan for the calendar year 1941, with the price at $398.85 per ton before and $400 after.

(*Continued on next page*)

fourth of one per cent).[9] Participants obtained about 150,000 tons more food and the non-participating population about 60,000 less food as a result. The total outlay on food by non-participants rose by just over $10,000,000 (or by about one-tenth of one per cent). By hypothesis, participants spent $60,000,000 more, an increase of 25 per cent over the normal $240,000,000; they obtained slightly less than 25 per cent more food because of the price rise.

Thus, according to our estimate, based on the most plausible assumptions, retail sellers of food received $70,000,000 additional revenue in 1941 because of the $100,000,000 Stamp Plan. Of the $70,000,000, $60,000,000 was primary effectiveness and $10,000,000 secondary effectiveness (the additional amount paid for food by the non-participant population).[10]

It must be emphasized that these results assume primary effectiveness of 60 per cent, elasticity of demand for food by non-participants of -0.7, and elasticity of supply for food of $+1.0$. Had primary effectiveness been greater, had the elasticity of demand for food by non-participants been less (say $+0.5$), or had the elasticity of supply for food been less (say $+0.5$), the increase in food sellers' gross revenues would have been greater. Conversely, had primary effectiveness been at or near the cash-subsidy level of 45 per cent, had the elasticity of demand for food by non-participants been greater (say -1.0), or had the elasticity of supply for food been greater (say $+5.0$), the increase in food sellers' gross revenues would have been smaller than $70,000,000.

If we assume a zero elasticity of supply—for the most debatable variable affecting secondary effectiveness—non-participants would have had to pay about $35,000,000 more for food as a result of the Stamp Plan. Thus with a trifle more than 60 per cent primary effectiveness and a zero elasticity of supply, the increased revenue to sellers would have been $100,000,000, the amount of the total subsidy. If we combine 80 per cent primary effectiveness, which is administratively achievable, with unit elasticity of supply, which is much more likely than zero elasticity, non-participant buyers would have had to pay about $20,000,000 more for their food because of the Stamp Plan, and, as in the preceding illustration, $100,000,000 increased sales of food would have been obtained for the $100,000,000 subsidy. It was not within the power of the SMA to alter the elasticity of supply, but it was within its power to raise primary effectiveness.[11] If the SMA had taken the necessary steps to raise primary effectiveness, participants would have acquired more food and food sellers more revenue. Hence, it should be arithmetically clear that the two goals of increasing food consumption by participants and increasing income of food sellers are essentially complementary, not conflicting.

How was the estimated increase in aggregate value of food sales of $70,000,000 distributed among farmers, processors, wholesalers, carriers, retailers and others? The most accurate information is on the

TABLE 8

ESTIMATED EFFECT OF FOOD STAMP PLAN ON AGGREGATE VALUE, PRICE, AND QUANTITY OF FOOD SOLD AT RETAIL IN 1941, FOR BOTH PARTICIPANTS, NON-PARTICIPANTS AND BOTH GROUPS COMBINED[a]

Class of Consumer	Value (millions)	Price (per short ton)	Quantity (million short tons)
(1) Without Stamp Plan			
Participants	$ 240	$398.85	0.60
Non-participants	12,090	398.85	30.31
Both Groups	$12,330	$398.85	30.91
(2) With Stamp Plan			
Participants	$ 300	$400	0.75
Non-participants	12,100	400	30.25
Both Groups	$12,400	$400	31.00
(3) Changes as result of Stamp Plan			
Participants	$60	$1.15	+0.15
Non-participants	10	1.15	−0.06
Both Groups	$70	$1.15	+0.09

[a] The following assumptions are involved with respect to the demand and supply functions: elasticity of demand curve for food by participants −1.0 both with and without Stamp Plan; elasticity of demand curve for food of non-participants −0.7, and this curve not shifted as result of plan; elasticity of supply curve for food +1.0, and this curve not shifted as result of plan.

[9] This assumed (1941) price of food, 20 cents per pound, was checked with the Bureau of Foreign and Domestic Commerce and the Bureau of Agricultural Economics for approximate accuracy.

[10] See table 8 for details and chart 8 for graphic presentation.

[11] The production control measures of the Agricultural Adjustment Administration and the price supporting measures of the Commodity Credit Corporation undoubtedly had some effect on the elasticity of supply of foods, but there seems to be no satisfactory method for taking them into account in this statistical analysis.

(3) All final consumers combined (participants and non-participants): The demand curve D_1 shows the amounts of food all final consumers would buy at various prices in a year *without* the Stamp Plan and the demand curve D_2 shows the amounts of food all final consumers would buy at various prices in a year *with* the Stamp Plan. The hatched area shows the additional aggregate payments ($70,000,000) made by all final consumers for food as a result of the Stamp Plan in 1941.

The graphic method used in chart 4, chapter IV, could not be conveniently used here because of the great difference in the quantities for participants and nonparticipants.

XUM

farmers' share of the consumer's food dollar. The fraction going to farmers (which rises with rising prices) averaged about 50 per cent for 1941. This proportion of the $70,000,000—amounting to $35,000,000 or slightly more—went to the farmers as additional revenue as a result of the Stamp Plan.[12] It is roughly correct to attribute 30 per cent of the increased revenue, $21,000,000, to retailers and wholesalers, and the remaining 20 per cent, $14,000,000, to processors and carriers. The fraction going to farmers varies greatly among commodities. For example, in September 1941, according to the Bureau of Agricultural Economics, the farmers' portion was 78 per cent for pork, 69 per cent for butter, 65 per cent for eggs, 52 per cent for navy beans, 50 per cent for potatoes, 48 per cent for flour, 40 per cent for fresh vegetables, 38 per cent for apples, and 32 per cent for oranges.

Can this estimated increment in food expenditures of $70,000,000 be imputed to particular food sellers, either in the final or the higher (processing, growing) stages of production? Since the effects were spread over stores of all types, regardless of the amount of stamps they redeem, the plausible rule-of-thumb method of imputation would be according to total sales volume. Individual farmers, processors, carriers, and wholesalers could obtain the effects for themselves by a similar method. Unfortunately, the precise influence cannot be traced out for particular sellers, either with reference to sales volume or net profits.[13]

[12] It is possible that, with changing consumer incomes, the *marginal* fraction of the consumer's dollar going to the farmer is larger or smaller than the *average* fraction. From the point of view of the farmer interest in the Stamp Plan, it would be better if the marginal ratio approached unity; from the point of view of the retailers and processors, it would be better if the marginal ratio approached zero. With a perfectly elastic supply curve, it is almost certain that the marginal ratio equals the average ratio. It seems probable that the more inelastic the supply curve for food the greater the likelihood of the marginal ratio exceeding the average ratio, since with a perfectly inelastic supply the amount of food to be marketed would be the same and the payments to non-farmers might not rise appreciably. With a supply curve having an elasticity between zero and infinity, such as the unit elasticity curve assumed in the text, the marginal ratio might rise slightly above the average ratio of 50 per cent. However, as Dr. Gold and his associates state in their *Economic analysis of the Food Stamp Plan*, 21: "The subsidy is paid at the retail level, and before it reaches the farmer it must pass through the marketing system. The greater the number of processing and marketing steps through which the commodity passes and the less fluid the relationship between farmer and retail prices, the less is the likelihood that the increase in consumer expenditures will be fully reflected in the farm price." In view of these frictions and in the absence of other evidence, it seems appropriate to assume that the marginal ratio equals or only slightly exceeds the average ratio, as was done in the text.

[13] Studies conducted by the writer in Portland and Eugene, Oregon, in July 1941 revealed that blue stamps amounted to less than 5 per cent of gross receipts for over 90 per cent of the food stores.

EFFECTS ON DISTRIBUTION OF INCOME AMONG CONSUMERS

It is obvious that a program which raises only $100,000,000 from one section of the population and transfers it to another, when the annual national income approximates $100,000,000,000 does not bring about a significant redistribution of income among the some 40,000,000 consumer units in the United States. The Stamp Plan brought the nearly 1,000,000 families participating in 1941 an increase in income of $107 per family. This raised participants' average income from $533 (the figure for comparable non-participants) to $640, an increase of roughly one-fifth. Thus it is clear that the Stamp Plan was not radically equalitarian in its effects. Indeed, among the participants, the higher-income families received more aid than the lower.[14]

In the preceding discussion of price, production, and gross sales, it was assumed that the non-participating population bore the entire tax burden, but not quite all of the $107 income increment can be considered net for participants because part of the subsidy funds were raised from participants through taxes on what they bought. Assuming tax financing of the subsidy, the incidence of the levy on the non-participants was probably somewhat progressive, the higher-income groups paying a greater proportion of their incomes than the lower-income families.

State and local taxes were probably somewhat lower than they would otherwise have been because of the Stamp Plan. For example, when the Plan was stopped in March 1943, New York City announced that its welfare budget would have to be increased by $8,000,000 per year. The Federal Security Agency has made a study of the effect of the Plan on relief payments which sustains this appraisal.

Further distributive effects would tend to follow from the rise in the price of food, although they are not statistically significant. The rise of about $1 per short ton of food (which quantity was approximately the 1941 per capita consumption) was obviously more burdensome for the non-participant poor than the other non-participants. In view of the fact that the price-elasticity of demand for food is almost certainly greater for poor families than for the more well-to-do, this rise in price presumably tended to bring about a relatively greater contraction in the physical volume of food consumed by the non-participant poor than by the other non-participants. It also made the participants' food dollar less effective in buying food than it would otherwise have been, although the larger number of dollars in the hands of participants permitted them to obtain more food in spite of increased food prices.

[14] For example, the poorest 4-person family receives about 3/4 of $107 (or $77) while the "richest" 4-person family receives about 4/3 of $107 (or $129). See table 3 or chart 1, chapter II.

EFFECTS ON WELL-BEING OF PARTICIPANTS AND OTHERS

Effects on participants beyond increases in income represented by the blue stamp donation and increased purchases of various types of commodities as a result of the increased income have been the subject of much discussion but of very little detailed investigation. The main effect, barring concomitant reductions in other income, was to make participants generally "better off." If the Stamp Plan had worked strictly as conceived, participants would have been better off solely with respect to food. But, since it did not and could not operate so perfectly, the improvement was spread over other items of consumption as well, in accordance with the tendency of people to spread an unearmarked increment to income over a number of different uses. Thus the indirect effects resembled those which would have been obtained from an equal cash increment to income, weighted in favor of an increase in food consumption.

There is much general evidence to support the view that increases in income are accompanied by better diets and improved health. The Bureau of Home Economics obtained evidence of improved diets in its Dayton, Ohio, study in 1939.[15] Some attempts were made by the SMA to determine from food purchase studies changes in diets resulting from participation in the Stamp Plan, but the results have not been announced. It is possible that the Food Stamp Plan encouraged greater variety as well as better balance in the diets of some participants, and it may have contributed to improved techniques of food buying and food preparation.

Finally, it is reasonably certain that the political effect of the Stamp Plan on the participants was "soothing," and tended to make them more willing to accept their economic lot. This result, if true, is not unimportant.

EFFECTS ON OPERATION OF ECONOMY

The question has often been raised as to whether or not a mechanism like the Stamp Plan contributes to the better functioning of the economic system, so far as maintenance of production and distribution flows is concerned. To the extent that the smooth functioning of the economy depends upon expenditure of final consumers' total income on consumption goods, the Stamp Plan is a move in the right direction. There was no question about the participants' high propensity to consume. There was not the slightest danger of saving, to say nothing of "oversaving," by Stamp Plan participants. In fact, their expenditures customarily exceeded their incomes.

It is by no means certain that a rapid disposal of money incomes, at any particular level, by consumers, would make for a regular flow of funds throughout the whole economic system; for, even though final consumers faithfully expended their earnings almost immediately after recieving them, the persons or groups making private (mostly corporation) and public investment decisions might not expend regularly the funds subject to their disposal. Business enterprises in particular, accustomed to seeking money profits, may prefer to hold cash, rather than invest, even though consumer propensity to consume is high.

Without further discussion of the causes of business fluctuations or economic well-being in general, it should be clear that the Stamp Plan is not a remedy for the business cycle or the general malfunctioning of the economy although it is unquestionably one good short-run palliative for certain specific ills. These specific ills are shortage of food for the non-farm poor and low incomes for food producers and distributors.

VI. POTENTIALITIES OF SPECIAL PURPOSE MONEY AND FUTURE OF THE FOOD STAMP PLAN

Supplemental Special Purpose Money can be put to several different uses in addition to the one elaborated in the preceding chapters and exemplified by the Food Stamp Plan. It can be used for many types of commodities instead of one type, for producers as well as consumers, and internationally as well as domestically. In this chapter we shall consider in some detail three of the potential applications of the supplemental Special Purpose Money technique not represented by the Food Stamp Plan: (1) several kinds of commodities for domestic consumers, (2) one kind of commodity for domestic producers, and (3) two kinds of commodities for consumers in two countries. The chapter concludes with a discussion of ways in which the Food Stamp Plan of 1939–1943 can be improved for possible future use.

SEVERAL KINDS OF SPECIAL PURPOSE MONEY

It will be recalled that the two main bases for the employment of Special Purpose Money are that the immediate beneficiaries be in definite need of the Special Commodities and that the suppliers of them be deserving, in some sense or other, of increased income by government action. If it happens that a certain section of the population is in serious need of many kinds of goods and services, and if the suppliers of these several commodities are also in need, why not use Special Purpose Money more extensively? Several series of Special Purpose Money could be made available to the chosen consumer beneficiaries for expenditure on the several classes of commodities. For example, with the same type of Special Purpose Money serving as Frozen Money and bonus money for any given class of commodities, No. 1 tokens could be used for food, No. 2 tokens for shelter, No. 3 tokens for clothing, and No. 4 tokens for reading matter, etc.

[15] See Gold and others, *op. cit.*, 66.

It is convenient to discuss this problem of increasing the number of lists of Special Commodities with reference to the limiting case, in which eligibles, in order to participate, would have to tie up all of their cash money in Special Purpose Money of different types. Under this arrangement participants would exchange all of their normal cash income for the various types of Special Purpose Money in accordance with the freezing requirements and would be given free Special Purpose Money of each type sufficient to bring the total of each type of special money up to a level determined by or accepted by a "Supplementary Assistance Administration." Other aspects of the Special Purpose Money system would remain the same, except that there would be no problem of Frozen Money for substitute commodities and Ration Money for complementary commodities since all would be tied up. In principle, this drastic arrangement strips participants of all regular cash funds, and is designed to direct the expenditures of participants into predetermined channels. Such a dispensation involves a drastic curtailment of consumer freedom of choice, but it illustrates vividly the full implications of an extended Special Purpose Money system.

It must be realized that such an elaborate Special Purpose Money system, to be of any peculiar worth, must require a different distribution of expenditures by participants than would be obtained from an equivalent cash supplement to their incomes. In the absence of such a requirement, the assisted families would presumably distribute their larger incomes in the same way as other people with incomes of this size—after a few minor adjustments. The new expenditure pattern should be significantly and defensibly different from that of the higher income group in which the subsidy would place the participating eligibles if the comprehensive Special Purpose Money system is to be preferred to a cash subsidy of the same size.

Such an all-embracing supplementation scheme imposes inflexibility upon the expenditure patterns of individual families. Since the determination of freezing requirements and donations calls for the classification of eligible families into some broad economic power-burden (e.g., income-family size) groups, the assortment of Special Purpose Money given to any one family might not enable it to satisfy its consumption desires at all satisfactorily, even though the assortment conformed to very reasonable standards for the average family of the particular power-burden group. In addition to this problem of individual family differences within power-burden groups is that of accidental or unanticipated variations in expenditures over time for particular families. Flexibility in expenditure rules is necessary to meet such varying needs or desires. Although basic taste patterns of particular families do not change rapidly and thus resist a general overhauling, accidental variations do occur and must be accommodated by flexibility such as is provided by unearmarked cash.

This leads to the problem of securing compliance with expenditure rules under such a broadened scheme. What is needed, apart from the flexibility required to handle accidental variations, is acceptance of a taste pattern different from that which will "naturally" govern the expenditure of the enlarged income. Compulsion is implicit in the Special Purpose Money system, but evasion may develop in spite of legal and other penalties designed to prevent it. Therefore, strong educational efforts must be made to reshape the taste patterns which underlie the expenditure patterns. Since expenditures depend upon both income and taste patterns, it is necessary to change both. If the educational and the compulsory techniques succeed in changing taste patterns, the Special Purpose Money plan, as distinct from the subsidy, rapidly ceases to be necessary as a device for maintaining altered expenditure patterns! Cash supplements to income will then do just as well.

Viewed from the consumption standpoint the broadened Special Purpose Money plan implies great confidence in administrators and their experts as to how much of the various types of commodities people should consume. In many respects people can judge better for themselves as to how their incomes should be distributed, or can learn of better ways through educational channels. Also, some importance may well be attached to individuals' making their own broad choices among consumption goods and services. There are other ways of convincing people that their consumption habits are "improper" than by requiring that they behave in certain ways, even with a bonus as an inducement. Finally, it appears likely that Special Purpose Money can have a greater effect in changing consumers' taste patterns if its use is concentrated on a few commodities or types of commodities at a time. In trying, very understandably, to kill two birds with one stone—increase economic power and change entire taste patterns of participants—the Special Purpose Money plan may spread its influence too thinly to succeed in reshaping taste patterns to conform to particular desired consumption and production levels. Also, there are limits to the extent to which misdirected production can be corrected by favorable shifts in demand.

This discussion seems to warrant the conclusion that the Special Purpose Money technique should not be used to take all regular cash money out of eligible consumers' hands, even though total expendable funds are increased substantially by subsidy assistance. What fraction of a family's cash income is it administratively feasible to freeze into and supplement with Special Purpose Money? This question cannot be answered definitely because the workable fraction varies with the number of kinds of Special Purpose Money, the total amount of income and the distribu-

tion of the income among the different types of Special Purpose Money as compared with what an eligible family would freely choose. Perhaps not more than two-thirds or three-fourths of total income (including the subsidy) of a family should be thus tied up. The margin of one-fourth to one-third need not be maintained if the required distribution of funds is neatly adapted to individual family desires; but of course the whole Special Purpose Money technique is superfluous then!

If the Special Purpose Money plan is to be successful in reshaping expenditure patterns, it must succeed in remodeling the underlying taste patterns either by persuasion or compulsion. If the remodeling required is "too drastic" for the participants, they will develop ways of evading the rules, e.g., make improper purchases with Special Purpose Money, sell or barter off the Special Commodities for those they prefer, or fail to participate—if the penalties for non-compliance appear very severe.

Since a Special Purpose Money plan, to be workable and successful, must call for some but not too much reshaping of taste patterns, is it possible to lay down an empirical rule as to how much reshaping should be attempted? With considerable hesitation it is suggested that the required expenditure pattern should not call for outlays on any single broad class of commodities of more than 25 per cent above the amount which typical non-participant families of the same income-burden class would spend. For example, if a four-person family with an income of $100 per month normally spends $40 on food, a four-person family normally receiving $75 income and spending $35 on food but obtaining $100 total income by the aid of the Special Purpose Money plan, should not be asked to have more than $50 (25 per cent above the normal $40 of the family normally receiving $100 per month income) of its total income of $100 tied up in Special Purpose Money expendable only for food (i.e., $15 of the $25 subsidy). With reference to nutritional standards this arbitrary 25 per cent figure may be too small, but in view of the slowness with which taste patterns change it may be too large. It is because of this sluggishness that educational and advertising techniques are not as effective, at least in the short-run, as Special Purpose Money—because of its compulsory aspects—in seeing that the increased income of participants goes into approved channels.

One more phase of the problem of widening the list of Special Commodities must be noted. Although a broad-scale Special Purpose Money plan employing several kinds of limited-use money might not succeed in altering taste and expenditure patterns of participants so as to make them conform to a standard, the plan may be an effective political device, in a generally equalitarian-humanitarian social milieu, for securing supplementary assistance funds for the needy section of the population. The expectation that these additional funds will be spent "properly" will tend to make other people as taxpayers and as competing buyers of the designated commodities more willing to accept these burdens.

SPECIAL PURPOSE MONEY FOR SELECTED PRODUCERS

Producers instead of consumers might be made the direct recipients of Special Purpose Money. The purpose of such action would be, in general, to subsidize the selected producers in a definite form, but also to aid the suppliers of the Special Commodities and to aid the customers of the selected producers. For example, if the producers of mattresses are given Special Purpose Money expendable only for cotton, they will benefit, as will, ordinarily, the sellers of cotton and the buyers of mattresses. Other buyers of cotton and taxpayers bear the principal burden.

The technique of operating a producer Special Purpose Money program differs somewhat from that of the consumer aid program. The differences may be brought out in the answers to three questions: (1) How much free Special Purpose Money should be offered mattress producers? (2) Should normal expenditures by these producers on cotton be frozen into Special Purpose Money? (3) Should any *quid pro quo* be required of the participating producers, e.g., lower prices, better quality, higher wages to employees? Let us consider these questions in order, using the example of cotton as the Special Commodity to be made available to mattress producers upon presentation of the proper Special Purpose Money.

(1) How much free Special Purpose Money should be offered the mattress producers? The answer to this question cannot be simple because there is no general "adequacy standard" to which reference can be made. The producer is a business firm and its principal aim is the making of profits. Therefore, we should not expect a firm to absorb more additional cotton than it can use profitably. Hence the question becomes: How much additional cotton can a mattress producer use profitably?

The problem of determining how much more cotton a mattress producer can use profitably can be analyzed conveniently with reference to simplified conditions as depicted in chart 9. Short-run competitive conditions are assumed. Among other things, competition means that the individual mattress producer faces a horizontal demand curve (or average revenue curve, AR, as in the chart) and that the marginal revenue curve (MR) coincides with the average revenue curve. Since short-run conditions are assumed, only variable costs are of concern; hence marginal variable costs of mattresses are shown in the chart in order to facilitate the determination of the most profitable output. The curve MC_1 shows the firm's marginal costs without the subsidy; curve MC_2 shows the firm's marginal costs

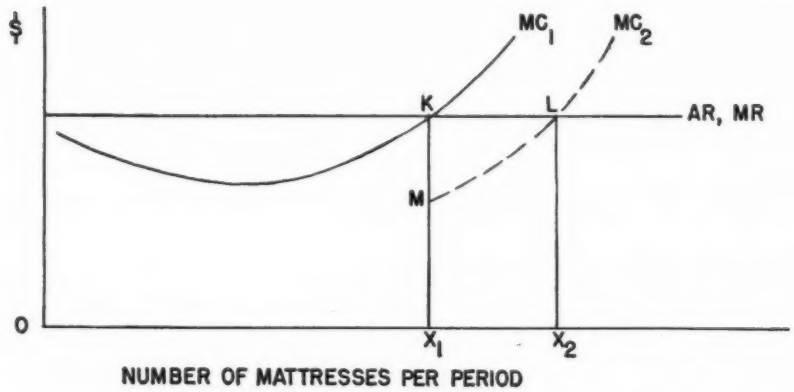


CHART 9. Effect of a cotton subsidy on a mattress producer's marginal cost curve and output, with normal cotton purchases maintained.

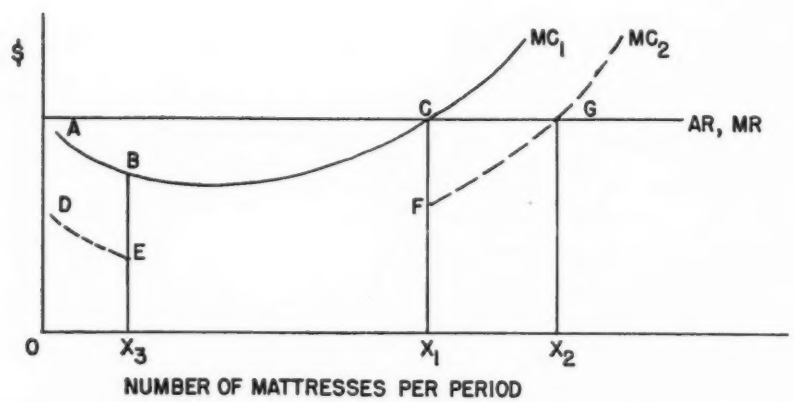


CHART 10. Effect of a cotton subsidy on a mattress producer's marginal cost curve and output, with and without a freezing requirement.

with the subsidy of free cotton for the additional output ($X_2 - X_1$), assuming normal purchases of cotton are maintained. Since the maximum profit for the firm above its variable costs will be obtained with an output at which MR and MC are equal, the availability of free cotton for additional mattresses raises the output of mattresses from X_1 to X_2. The greater the proportionate significance of cotton as a variable cost factor and the greater the elasticity of the marginal cost curve, the greater is the output which can be brought about by offering free cotton.

In the diagram X_2 is the output point of maximum profitability, so $X_2 - X_1$ mattresses multiplied by the amount of cotton per mattress gives the amount of additional cotton that this firm can use profitably if obtained free of charge. It would seem quite simple to determine the particular firm's quota of free cotton by this means, but difficulties arise in determining the shape and position of the marginal cost curve, even though the flat demand curve may be estimated with passable accuracy over short periods of time.[1]

[1] The question of how much free cotton the firm can use profitably gets a different answer under non-competitive conditions and under long-run rather than short-run conditions. The differences are summarized as follows:

Negatively sloping demand curve, short-run. The more inelastic the revenue curves, the smaller is the amount of additional cotton, though free, which can be used profitably in the production of mattresses. A completely inelastic demand curve for a firm's mattresses, though a practical impossibility, would make the subsidy absolutely useless for increasing output. Since actual

(2) Let us now consider the next major question, namely: Is it necessary to freeze normal expenditures on the Special Commodity (cotton) into Special Purpose Money to prevent substitution of the free cotton for the normally purchased cotton? The preceding discussion presumed that the firms bought their normal amounts of cotton at the going price while they received the bonus cotton. The results were those which would have obtained had the participating firms been required to freeze their normal expenditures on cotton into Special Purpose Money as a condition of receiving the free Special Purpose Money. Is this freezing necessary? Would different outputs and prices result if freezing were not required?

If offered the supplementary free cotton without the compulsion of freezing normal expenditures on cotton, the firm will naturally take its free cotton and then buy whatever additional cotton is needed to maximize profits. The free cotton will cause the marginal cost of the first units of output to be lower than otherwise, as may be observed in the discontinuous curve *DEBC* in chart 10. But since the firm has to buy cotton for outputs in excess of X_3, the marginal cost curve conforms to the original marginal cost curve *ABC* beyond *B*. Thus the price and output of mattresses remains the same and *the entire subsidy goes to the mattress producers*. In other words there is 100 per cent substitution, so far as increasing the consumption of cotton is concerned. We may conclude, therefore, that *freezing requirements are necessary and should tie up all normal expenditures* of participants on Special Commodities into Special Purpose Money expendable only for Special Commodities which they can use only for increasing the output of their own sales commodity. To the extent that the freezing requirements do not capture the normal expenditures on Special Commodities, there will be substitution, which means that subsidy funds go to the producer as profits.

(3) Let us now consider the third general question: Is it necessary or desirable to require a *quid pro quo* from the producer-participant as a condition of his receiving the free Special Purpose Money? That is, should the producer participant be asked to do something more than put the additional Special Commodities to the most profitable production use he can? He might be asked, for example, to lower the price of his sales commodity a specified amount, raise the quality of output, pay more taxes, raise wages, or improve working conditions of employees. Since profits of the firm would increase, even with the freezing requirement in effect, the general effect would be to share this increase in profits with consumers or employees. The workability of such requirements would depend principally on the amount of additional profit left to the firm, and the certainty that this increment would be obtained. In the experimental stages of such a plan the participating firms might be required to share these special profits.

One further question arises: Should normal expenditures on close substitute commodities be frozen into another kind of Special Purpose Money to prevent the substitution of cotton (in the above example) for other factors of production of the sales commodity? Such freezing should be required if substitution is likely and if it is significantly large, provided there is any genuine public concern over this diversion. If these conditions are lacking, there is certainly no point in setting up further special machinery.

To summarize this rather long discussion it appears (1) that the grant of free Special Purpose Money to selected producers should not exceed the amount which they can use profitably in acquiring Special Commodities to be used in increasing the output of their sales commodities, (2) that normal expenditures on Special Commodities should be frozen into Special Purpose Money, and (3) that a *quid pro quo* should be required of the participating producers where administratively feasible. The beneficiaries of this plan are the sellers of cotton, the firms receiving the Special Purpose Money expendable only for cotton, the buyers of mattresses, and possibly others who may share the firm's profits. Taxpayers bear the burden, subject to the changes in incidence brought about by shifting.

A combined consumer and producer Special Purpose Money program might well be operated at times. If selected consumers were given Special Purpose Money expendable only for additional mattresses, to use the

---

firms dealing in mattresses would be likely to have somewhat sloping demand curves, it is worth observing that the estimation of their shapes and locations is more difficult than in the case of the horizontal demand curve. A seller knows fairly well whether or not he can sell all of his supply at the going price; but he is not so certain of how much more he can sell at lower prices or how much less at higher prices.

Horizontal demand curve, long-run. The free cotton offer causes the individual producer's supply curve (equivalent to MC curve in this case) and the aggregate supply curve (for all mattress producers) to shift to the right, so that with aggregate demand remaining constant, price falls as output increases. Since this means that the individual mattress producer faces a lower horizontal demand curve than he originally expected—assuming he did not anticipate these repercussions—his output will not be quite as large as originally expected.

Negatively sloping demand curve, long-run. Under these conditions the position and shape of the demand curve faced by one firm tends to vary with the price-output combination established by one or more other firms. Such interdependence provides uncertainty, which in turn often leads to price and/or output regulations on the part of the sellers, acting as a group. Product differentiation—such as fancy trimmings on the mattresses—is also often attempted to provide more stability to the particular firm's demand curve. If a combination is already operating to control prices and/or production, the Supplementary Assistance Administration should negotiate the price decrease and production increase which would correspond approximately with the new equilibrium position required by the use of the free cotton by the subsidy. In the absence of a combination, the SAA should negotiate individual production increases and price decreases with the mattress producers. This is the only way to assure the results desired under conditions of oligopoly and monopolistic competition.

above example, and the producers were given additional cotton, the effectiveness of the program in moving cotton would be much increased.

SPECIAL PURPOSE MONEY TO FOSTER ENLARGED INTERNATIONAL TRADE

What modifications in the Special Purpose Money plan are required to make it an effective tool for fostering the international exchange of larger amounts of selected commodities? Two steps are needed, assuming that Special Purpose Money systems are already established and that restrictions (tariffs, quotas, sanitary regulations, etc.) on the physical movement of commodities between countries do not seriously interfere with increased movement. First, commodities originating primarily in foreign countries should be emphasized in the list of Special Commodities. Second, payment problems, if they arise, should be eased over short periods, by the joint action of "equalization funds" of the several countries. (Only a consumer, not a producer, program is considered here.)

The placing of commodities of dominantly foreign origin on the Special Commodities list is a workable first step. It can be done unilaterally, bilaterally, or multilaterally, so far as the decision to foster international trade is concerned, and can involve, for any one country, commodities from one or more other countries. This is an uncomplicated method of internationalizing the effects of the Special Purpose Money system.

The mechanics of this arrangement would be simple. Importers in country A would pay exporters in countries B, C, and D in the customary manner; likewise for importers in countries B, C, and D. Nothing more is involved, technically, in making Special Purpose Money serve the purpose of fostering international trade, provided no transfer problems arise. However, the transfer of money internationally is frequently complicated or even prevented by exchange regulations, so we must inquire briefly into the payment or transfer difficulties which an international Special Purpose Money program would almost certainly encounter.

An illustration will serve to clarify the problem and to show the alternative solutions. Let us take the United States and Brazil, and two commodities, apples and coffee, for our illustration. Suppose that the United States government gives to participants in its Special Purpose Money scheme free special money and that it requires that participants freeze normal coffee expenditures into the same Special Purpose Money which can be spent only on Brazilian coffee. Similarly, let Brazil freeze normal apple expenditures of its participants into Special Money and supplement these amounts with its same kind of Special Purpose Money, good only for American apples. Provided there is some effectiveness—not 100 per cent substitution—in the operation of the two plans, regular handlers of coffee in the United States will increase their purchases of coffee from Brazilian producers and regular handlers of apples in Brazil will increase their purchases of apples from American apple producers. The Brazilian SAA will redeem the apple-money it has issued into milreis; the American SAA will redeem the coffee-money it has issued into dollars. The additional regular money needed by United States coffee importers to buy the additional coffee, and the additional regular money needed by the Brazilian apple importers to buy the additional apples may be obtained in a variety of ways. Two examples will illustrate the methods. Apple exporters may take their payments from apple importers in milreis and then sell them for dollars to the coffee importers (directly or indirectly), who transfer the milreis to the coffee exporters. Or, coffee exporters may take their payments in dollars from coffee importers and then sell these dollars for milreis to apple importers for transfer to apple exporters. The intermediation of banks, usually willing to increase or decrease their foreign balances, at least temporarily, simplifies the process for foreign traders in commodities.

This process will work very smoothly through normal channels provided the resultant opposite demands for milreis and dollars offset each other (neglecting other international transactions, of course). However, issuance of apple-money in Brazil and of coffee-money in the United States may be unequal, at some given rate of exchange of dollars and milreis, and there might be different amounts of substitution in the two countries. These two factors of issuance and leakage have to be such as to yield equal net increases in demand—by apple importers for dollars and by coffee importers for milreis—if the arrangement is to work out perfectly. However, if the American participants sell their coffee thus acquired to non-eligible persons, who in turn cut down substantially their regular purchases of coffee, the net increase in coffee imports into the United States will be much less than the amount of the subsidy to participants in the form of Special Purpose Money. The Brazilians might not behave this way; they might eat the additional apples just as they should. As a result of such a development, Brazilian holdings of dollars would tend to decrease and Brazil might then want to cancel the agreement rather than take other measures for bringing about equilibrium in its international balance of payments.

This is the point at which the principal difficulties will be encountered. If the United States and Brazil were to establish an "equalization fund" from which loans or grants could be made to compensate for these discrepancies, this difficulty would be removed, at least temporarily. Perhaps during the next time-period the reverse situation would occur and the United States SAA could be assisted. Such an equal-

ization fund for these Special Purpose Money programs cannot be considered an answer to a continued deficit by one country. The plans of the two countries would have to be revamped or other items of the international balance of payments of either or both countries would have to undergo compensating changes.

The problems are not essentially different for a many-country and many-commodity Special Purpose Money program. If several countries issue Special Purpose Money for selected imported commodities, and if substitution is not complete, there will be an increased import demand for these commodities in each country. Only by chance will the net increase in imports of these commodities equal the net increase in exports, for each country. Unless very special circumstances exist, the imports may easily come from a few countries, with the result that others of the importing countries have a net reduction in their foreign money balances (other items in their balances of payments assumed to remain undisturbed) while the few experience net increases in their foreign balances on these items. This situation may be alleviated by employment of an equalization fund as described before, but unless adjustments can be made in the programs or unless other balance of payments items can compensate, failure of exports from particular countries will eventually result in these countries dropping out of the scheme or being continually subsidized by the other countries. If the subsidizing were a likely prospect, limits would have to be imposed by the managers of the equalization fund on the advances they would make to any one country. Managers of such a fund would have to work in close cooperation with the central banks and similar agencies of various countries. They might also find it desirable to impose some administrative controls over the various Special Purpose Money plans in order to prevent excessive substitution.

It becomes evident that the greatest difficulty likely to arise in operating an international Special Purpose Money program—assuming that programs are operating in the individual countries and that commodity barriers are not too severe—is the payment problem, or more broadly and more correctly, the problem of maintaining equilibrium in the international balance of payments of each country. This problem does not arise from the Special Purpose Money program or from any other particular type of international transaction. Rather does it arise, at least superficially, from the absence of a unified international money system comparable to the domestic money systems, under which funds may be transferred from one place to another dollar for dollar or milreis for milreis. Since we are concerned with setting up a Special Purpose Money system under likely actual conditions and not with correcting the international monetary ills, only the three main methods of securing adjustments in any country's international balance of payments will be briefly set forth.

First, if the currencies of various countries are unstabilized (not tied to each other at fixed rates of exchange) and may be traded in freely without exchange control (that is, without limitation on purchases and sales of foreign monies), then the lack of equivalence in the Special Purpose Money items, if not offset by changes in other items, is reflected principally in changed foreign exchange rates. If country A has a smaller value of export items at the old rate of exchange than of import items, the price of its currency in terms of foreign currencies falls. The actual importance of "free exchanges" of this type varies greatly from time to time but will probably be small in the near future. The International Monetary Fund allows for orderly changes under certain conditions, but in no sense contemplates a free currency market.

The second type of adjustment is that which occurs under fixed-exchange rate régimes, such as the traditional gold standard. If the above-mentioned disequilibrium in the balance of payments of country A occurred, some item (gold, in the traditional example) would be exported to redress the balance temporarily; and country A might eventually reduce its money supply with the view to reducing prices in order to increase exports and redress the balance more permanently. It would also hope that other countries would increase their money supplies and increase prices and thus induce reduced exports and/or increased imports. This "orthodox" mechanism for achieving equilibrium in a country's balance of international payments requires price flexibility and internal mobility of factors of production such as do not characterize the major industrialized economies of the present time. Monopolistic behavior of various types is the root difficulty.

The third type of adjustment calls for some form of explicit action by governments or quasi-government agencies, on a unilateral, bilateral, or multilateral basis, for maintaining equilibrium in the balance of payments. An example of this type of action is the granting of a loan to country A from country B to handle the situation cited here. This is ordinarily done on the asumption that the situation will be reversed before too long. Another example is the restricting of imports by one means or another by country A; another the subsidizing of exports by A. In substance, these particular devices are undertaken in order to reduce A's demand for foreign currencies and to increase foreigners' demands for A's currency. In recent years the full paraphernalia of governmental control have been employed to interfere with the transfer of funds (as well as commodities) and are not likely to be discarded quickly although valiant efforts are being made in connection with the International Monetary Fund, the International Bank for Reconstruction and Development, and the (proposed)

XUM

International Trade Organization (to deal with trade barriers, cartels, and commodity agreements).

The prospects of operating a Special Purpose Money scheme of international proportions under either a flexible-exchange or a fixed-exchange régime, without significant government interference with international trade or capital movements, are not bright for the very near future. Hence the earlier suggestion for a modest amount of government interference or control in the form of a special equalization fund. The internationalization of the Special Purpose Money program might well be accompanied by explicit understandings among these exchange-pegging agencies that they will lend their support as needed, within limits. After a trial period the extent to which the various import-export items cancel out will be known, approximately, and the "contingent liability" of the exchange-peggers can be taken into explicit consideration. In case Special Purpose Money items do not balance out for all countries, one or more of them might want to subsidize the others, at least temporarily.[2]

These are the broad outlines of the arrangements needed to make the Special Purpose Money program international without requiring that the various countries enter into explicit agreements of a quasi-barter sort to assure import-export equivalence on this account for every country. Such detailed quasi-barter arrangements can be worked out bilaterally or multilaterally, but they call for minute controls over importers and exporters going far beyond those characteristic of the government relation to the "normal channels of trade" through which the Special Purpose Money plan is presumed to function.

The distribution effects of an international Special Purpose Money program are substantially the same as a domestic one, since the funds to redeem the Special Purpose Money and to meet deficits internationally on this account are raised in one or more of the ways discussed earlier. The general results are the provision of needy people with more useful consumption goods, though from outside the national boundaries, and to assist the sellers of those commodities, even though their customers are across national frontiers. The gain is mutual.

To internationalize the Special Purpose Money program is to carry it to its logical conclusion, namely, to make fuller utilization of the capacity of many countries to better the condition of the needy in all these countries. It is possible that a small but successful experiment of this type might serve to crystallize the essential long-run interests of the vast majority of producers and consumers everywhere in support of enlarged international trade operating under a single international money system. An international Special Purpose Money program would give millions of people a direct and immediate appreciation of the benefits of international trade.

The United States is or soon will be the world's principal international creditor and controller of many of the principal lanes of commerce. The economic welfare of the people of the United States and of the other countries of the world will be enhanced by increased international trade. The tendency for each country to lapse into protectionism and autarchy must be resisted, and a bold Special Purpose Money plan of international proportions, especially with the onset of depression, would be one dramatic and concrete method of convincing people in many countries of the superiority of international trade over self-sufficiency.

IMPROVEMENT OF THE FOOD STAMP PLAN FOR FUTURE USE

Although the Stamp Plan, if used again, might well be expanded along some of the lines just indicated, it could also be measurably improved within the scope of the 1939–1943 model. When and if it is reintroduced, it should be simplified and standardized so that it can be utilized not only more effectively but also more readily. The following list of proposed changes derive from the analysis in this study and would almost certainly improve the Food Stamp Plan for post-war use.

STATEMENT OF AIMS

An unequivocal statement of aims for the Food Stamp Plan will be needed. Stamp plan administrators need such a statement as much as welfare administrators, eligibles, grocers, farmers, and the general public. Explicit approval by Congress rather than authorization through administrative interpretation would help provide this greater definiteness of purpose. All responsible persons connected with the Plan could then relate their particular administrative actions back to these fundamental aims.

CHANGES IN ADMINISTRATIVE TECHNIQUES

The Food Stamp Plan needs greater simplicity and uniformity. The intricacies of procedure and the geographic adaptations of the 1939–1943 version frequently encumbered and obscured the essentials. The following changes are needed.

(1) Reduce the kinds of stamps from two to one. The "structural defect" makes the two-color stamp system meaningless.

(2) Eliminate the blue stamp food list as such. Use various advertising techniques to foster sales of particular foods. Make clear, at least for operating pur-

[2] The use of several agencies of international finance is common. For example, in 1942 the Board of Governors of the Federal Reserve System, the Stabilization Fund of the Treasury Department, the Export-Import Bank of the Federal Loan Administration, and the Office of Lend-Lease Administration all operated in this field. International cooperation might well be achieved through one or more of the new international organizations mentioned in the text.

poses, the basis for selecting commodities to be "pushed."

(3) Introduce explicit and uniform eligibility rules. Certify eligibles in accordance with high welfare standards; employ self-certification by eligibles only where certification by local relief officials is questionable or where it cannot be handled directly by Stamp Plan officials. Certification should be valid for not longer than three to six months and should provide information on total family income (including its sources) and family size (plus essential information on family composition and any peculiar burdens).

(4) Set freezing requirements at the average, or somewhat below the average, of normal food expenditures of families in each income-family size group except for modifications needed to provide continuity in the requirements from one income-family size group to another.[3] Determine freezing requirements from empirical food purchase studies and introduce other variables than income and family size as bases for varying purchase requirements (and grants), provided isolation of these other variables reveals reliable differences in normal food outlays.

(5) Set the per-family blue stamp grant to any particular income-family size class of families at the difference between the orange stamp purchase requirement and an arbitrarily selected standard of food outlays, equal to or less than the adequacy level. The grant will then approximate the average deficiency below the standard if the freezing requirement approximates average normal food expenditures.[4]

(6) Do not allow above-minimum purchases and the corresponding larger donations.

IMPROVED SYSTEM OF REPORTS IN ORDER TO IMPROVE ADMINISTRATIVE CONTROLS

Specifically:

(1) Make regular studies of the effectiveness of the subsidy among participants according to diverse breakdowns, particularly geographic area, family size, income group, and relief category. These studies should show effectiveness for various commodities and in the aggregate. These would be the most important reports on the operation of the plan because they would show the extent to which the subsidy dollars resulted in increased food expenditures.

(2) Improve the reports on eligibility and participation. Make more intensive inquiries into the reasons underlying participation and non-participation of eligibles. In connection with these reports check on the regularity of participation by eligibles and on under-issuance where instalment purchases are permitted. Undertake occasional studies of public attitudes and knowledge about the operation of the Stamp Plan.

(3) Release stamp use reports—which would cover all foods under the one-color stamp scheme—only after correcting them for substitution, so that they would show the net increase in outlays on particular foods attributable to the subsidy.

(4) Maintain a continuous record of individual store redemptions. This information would show the seller outlets getting the principal benefits of the subsidy; it could be used in organizing administrative activities (especially compliance and education), and for more accurate selection of sample stores for stamp use surveys.

(5) Keep a running record of relief payments in Stamp Plan areas in order to prevent the donated stamps from becoming a subsidy to the local taxpayers instead of to the poor people.

(6) Make administrative cost studies in order to provide a better basis for judging the yield, in terms of net effectiveness of funds expended, of various types of administrative mechanisms in different areas of the country. The specific parts of the administrative program should be analyzed in order to determine their contribution toward making the subsidy yield net increases in food outlays among participants.

Finally (7), assemble in a regular monthly bulletin, similar to those published by various government agencies, the relevant statistics and facts on the operation of the Food Stamp Plan. Such a government subsidy program is "the people's business" and its results should be available to the public.

RELATION TO THE RELIEF AND SOCIAL SECURITY SYSTEM

From the welfare point of view the Food Stamp Plan appears simply as a special form of poor relief. Hence the question arises: if relief standards and assistance improve substantially, will not the Stamp Plan become superfluous? Relief standards are not going to be so high in the United States in depression years, so far as one can tell, that a supplementary assistance program of this type will soon become a "luxury." Moreover, the Stamp Plan will function better where a good relief administration exists and where relief payments are relatively high. This is attested to by the entire operating experience of the Stamp Plan.

Consequently, if a "general relief" category should be added to the existing welfare categories (old age assistance, aid to the blind, and aid to dependent children) under the Social Security Act, in order to provide federal aid to state and local governments in caring for their general relief cases, the Stamp Plan

[3] This rule should be modified in the light of certain facts and in order to achieve particular combinations of aims. See appendix A for illustrations and discussion.

[4] In view of the high substitution pressures at the lowest income levels under this system of making grants, a good case can be made for reducing grants slightly below those recommended here. However, no objective standard is available to guide such reductions.

could unquestionably become a more effective rather than a less effective mechanism for providing specific supplementary assistance.

MANAGEMENT OF THE FOOD STAMP PLAN

The propriety of locating the organization managing the Food Stamp Plan in the Department of Agriculture has been questioned. Particular functions cannot be distributed among the various departments of the government on a completely systematic basis, but alternative locations for the agency administering the Stamp Plan are worth consideration. The Surplus Marketing Administration was allied with other branches of the Department of Agriculture in the task of fostering increased consumption of foods. The administrators of the 1939–1943 Stamp Plan, however, had nothing directly to do with farmers. Their contacts were largely with relief administrators, social workers, and members of the food distribution industry.

The most plausible alternative location is probably the office of the Federal Security Administrator. A broader relief attitude would prevail there, but the more limited objectives of the Stamp Plan—which are its peculiar strength—would tend to be lost. It seems likely that under the supervision of the Federal Security Agency, with its broader outlook, administrators of the plan might easily disregard the limited objective of the Stamp Plan—to increase food consumption. Even with the SMA organization located in the Department of Agriculture, concern over the non-food needs of relief clients sometimes obscured the limited aims of the Food Stamp Plan and weakened the administrative procedures for achieving greater food consumption. Since the producer interest in making the Stamp Plan function coincides almost perfectly with the public and participant interest in improved nutrition, it appears that a future "Supplementary Assistance Administration" operating the plan should be a part of the Department of Agriculture—at least as long as the officials there can bring to the problems involved a comprehensive point of view.

CONCLUSION

Many people have looked upon the Food Stamp Plan as one of the devices by which some of the inadequacies and imperfections of the economic system could be overcome. There can be no doubt as to its usefulness within a limited sphere. The operating experience of the Food Stamp Plan from 1939 to 1943 stands as the test of this technique. If the Stamp Plan had turned out to be no better than a straight cash subsidy in achieving particular aims, the Special Purpose Money technique would have been in ill repute for many years to come.

Unquestionably the Food Stamp Plan brought more food to poor people than a straight cash subsidy would have done. It also brought larger revenues to sellers of food, at the expense, of course, of other people, primarily as taxpayers but also to a slight extent as buyers of food. But there is sound basis for believing that the Plan, if revised, can be made even more effective. It is possible to administer the Food Stamp Plan so that at least 80 per cent of the total subsidy will go into increased food expenditures by participants instead of the 60 or so per cent apparently obtained in 1941. Hence the technique it represents may be employed on future occasions with reasonable assurance that good results will be obtained.

A final note of warning should be sounded. An economic system which stands only with the support of stamp plans and other such props is not a permanently satisfactory system. Employable persons in the United States generally want to receive their income in return for worth-while services rendered. The dependent young, the dependent old, the physically and mentally handicapped, and the temporarily unemployed deserve to have their livings provided them by means which do not brand them as social outcasts. Properly-managed stamp plans can give us time to devise and institute needed changes in our economic structure. We need these changes in order to utilize better our manpower, technology, and resources in satisfying more fully the wants of ourselves and our fellows. Stamp plans must not blind us to these greater tasks.

APPENDIX

A. EFFECT OF VARIATIONS IN FREEZING REQUIREMENT ON EFFECTIVENESS, PARTICIPATION, AND COST OF PROGRAM

By positing certain facts and relationships it is possible to determine with precision the effect of variations in the freezing requirement (orange stamp purchase requirement) on effectiveness, participation, and the (non-administrative) cost of a Special Purpose Money program. This analysis is important for two main reasons. First, it facilitates the determination of the freezing requirement that yields maximum effectiveness from a given volume of funds. Second, it indicates the consequences of employing as the operating objective a combination of effectiveness, participation, and cost other than those which would be obtained by maximizing effectiveness. For example, high participation might be considered more important than high effectiveness from a given volume of funds. The discussion in this appendix is carried on in terms of the Food Stamp Plan in order to give it concreteness.

First let us consider the problem from the point of view of setting an orange stamp purchase requirement which will maximize effectiveness. The other operating objectives, low cost and high participation, will be taken up later. The answer to the question, "What freezing requirement will maximize effectiveness?" depends on three factors: (1) the shape of the frequency distribution of eligibles among normal food expenditure classes, (2) the size of the blue stamp grant corresponding to different orange stamp purchase requirements, and (3) the extent to which the purchase requirement affects the decisions of eligibles to participate. The first two factors are self-explanatory, but the third calls for some elaboration. If the purchase requirement is below the normal purchases of every family in the group, it will presumably not serve as a deterrent to participation. If the purchase requirement is above the normal purchases of every family in the group, the likelihood is small that more than a few, if any, of the eligibles will participate. With the purchase requirement between these limits, it seems reasonable to expect a high but not perfect inverse correlation between the purchase requirement and participation. (As discussed in the text, elements other than purchase requirements affect participation.) In order to deal with the problem of the relation between the orange stamp purchase requirement and effectiveness, however, it is necessary to make some rigid assumptions as to the degree of correlation between the purchase requirement and participation. A highly rational eligible would presumably participate even though the freezing requirement exceeded his normal food purchases by a small amount because he would presumably be willing to give up some regular money in addition to his normal food outlays in order to acquire the free blue stamps. Just how far an eligible would go is of course indeterminable *a priori*, but a margin of indifference is entirely plausible for different size freezing requirements and grants. However, for purposes of analysis we shall assume that an eligible will participate if the purchase requirement is equal to or below his normal food purchases, but will not participate if the requirement is above. If eligibles are well informed as to the subsidy program, this relationship is probably quite realistic.

The problem of maximizing effectiveness as posed here arises mainly because eligible families have to be treated as groups so far as setting the purchase requirement is concerned. If each eligible family were required to purchase orange stamps to the exact amount of its normal food expenditures, no substitution would result from the setting of the purchase requirements. (Substitution might result from other causes: improper expenditure, irregular participation, or concomitant reduction in income.) But owing to the complete impracticability of this individualized arrangement, it is necessary to set a single freezing requirement for a group of families. And, since normal food expenditures vary among families in the same income-family size class, it is evident that any actual orange stamp purchase requirement will exceed the normal food expenditures of some eligible families and fall short of those of others, provided it falls within the range. How does this phenomenon affect substitution, or its complement, effectiveness?

The influence of the orange stamp purchase requirement on effectiveness can best be analyzed by means of examples. Examples are used which make different combinations of assumptions with respect to the first two determining factors listed above. First, let us assume a symmetrical and probably not untypical frequency distribution of eligibles as to normal food expenditures (column 2, table 9), in conjunction with a blue stamp grant equal to one-half the value of orange stamps purchased (as in the Food Stamp Plan). The various elements of the situation are shown in table 9 and chart 11. As the orange stamp purchase requirement, the independent variable, takes on values from $16 to $31, corresponding values are shown for the other elements. Aggregate normal food expenditures remain constant until the purchase requirement exceeds the normal expenditures of one or more families, at which point (freezing requirement of $21) the aggregate declines (curve 5, column 5) because of the non-participation of these families. Aggregate

TABLE 9

INFLUENCE OF ORANGE STAMP PURCHASE (FROZEN MONEY) REQUIREMENT ON COST, EFFECTIVENESS, AND PARTICIPATION
With 1–2 blue-orange ratio (no above-minimum purchases)

Normal monthly food expenditures per family (also orange stamp purchase requirement)	Number of families		Aggregate normal food expenditures		Aggregate orange stamp purchases	Aggregate blue stamp grants (1–2 blue-orange ratio)	Aggregate value in food stamps	Aggregate effectiveness	Aggregate substitution	Percentage:	
	By classes	Cumulative (participation no. & %)	By classes (col. 1 × col. 2)	Cumulative						Effectiveness	Substitution
					(col. 1 × col. 3)	(One-half col. 6)	(col. 6 + col. 7)	(col. 8 − col. 5)	(col. 7 − col. 9)	(col. 9 ÷ col. 7)	(col. 10 ÷ col. 7)
Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8	Col. 9	Col. 10	Col. 11	Col. 12
$16	0	100	$ 0	$2500	$1600	$ 800	$2400	$−100	$900	−13%	113%
17	0	100	0	2500	1700	850	2550	50	800	6	94
18	0	100	0	2500	1800	900	2700	200	700	22	78
19	0	100	0	2500	1900	950	2850	350	600	37	63
20	2	100	40	2500	2000	1000	3000	500	500	50	50
21	4	98	84	2460	2058	1029	3087	627	402	61	39
22	8	94	176	2376	2068	1034	3102	726	308	70	30
23	13	86	299	2200	1978	989	2967	767	222	78	22
24	15	73	360	1901	1752	876	2628	727	149	83	17
25	16	58	400	1541	1450	725	2175	634	91	86	14
26	15	42	390	1141	1092	546	1638	497	49	91	9
27	13	27	351	751	729	364.5	1093.5	342.5	22	94	6
28	8	14	224	400	392	196	588	188	8	96	4
29	4	6	116	176	174	87	261	85	2	98	2
30	2	2	60	60	60	30	90	30	0	100	0
31	0	0	0	0	0	0	0	0	0	0	0

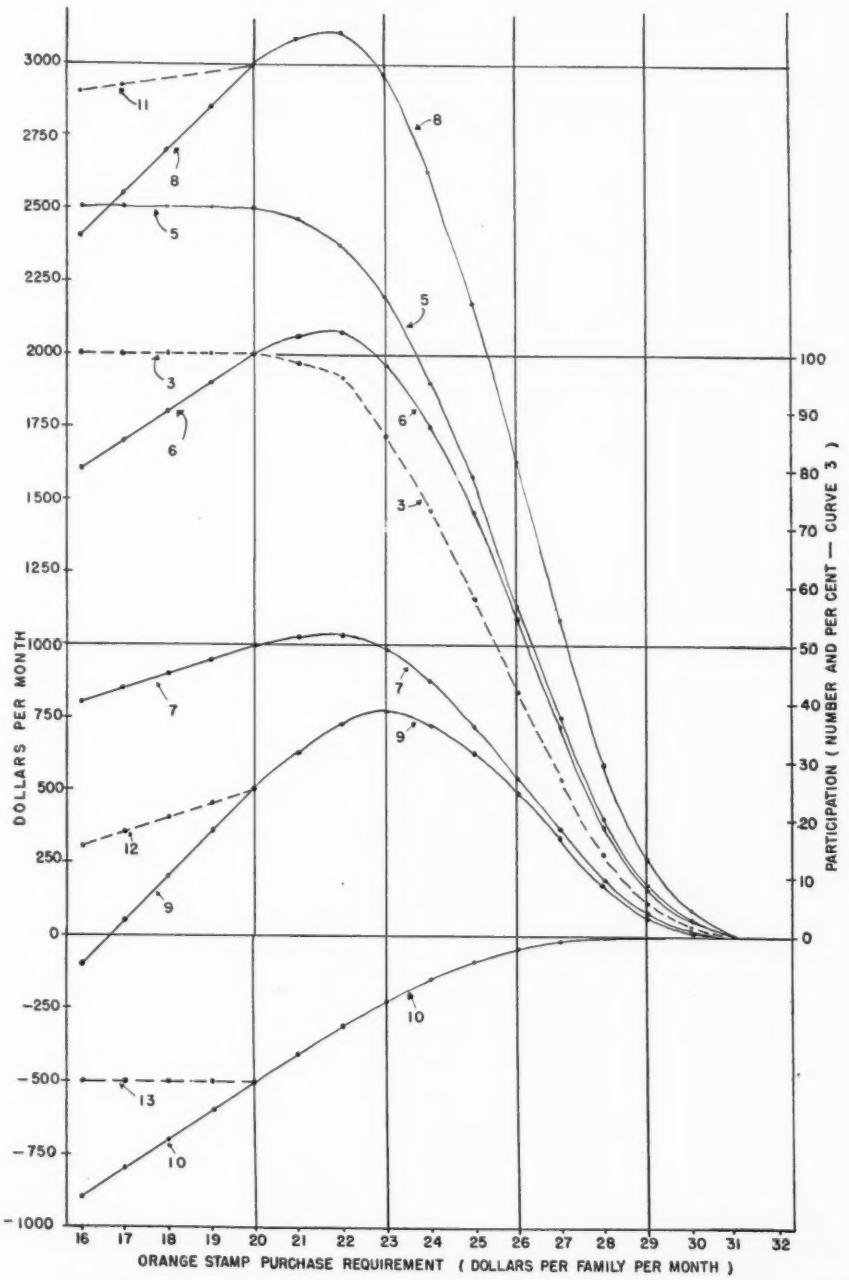
"program" food expenditures of participants—presumed to equal orange plus blue stamps on the assumption that improper expenditures of stamps, if any, are offset by cash expenditures—increase to a maximum at $22 and then decline (curve 8, column 8). (Curve 8 does not portray program food expenditures properly over the range from $16 to $19 because cash contributions to the eligible participants of the amounts shown in curves 7 would, we may properly suppose, result in increases in food outlays to, say, half the amount of the contributions. Curve 11 shows the program level of expenditures over the range from $16 to $19; the orange and blue stamps would be supplemented by cash outlays up to the level shown in curve 11. Hence freezing requirements below $20 are utterly useless.)

Effectiveness, the difference between curve 8 and curve 5, is shown in curve 9 (and column 9). This variable reaches a maximum of $767 at a purchase requirement of $23, which is $2 below the mean. (Curve 12 shows the effectiveness which would result from a cash subsidy over the $16 to $19 range, as described with reference to curve 11. This illustrates again the fact that a Special Purpose Money technique has no usefulness at all when the freezing requirement is below the lowest normal food expenditures of the eligibles.) The blue stamp subsidy necessary to achieve this effectiveness is $989, so that substitution (curve 10, column 10) is $222. Effectiveness is 78 per cent, substitution 22 per cent. (Curve 13 shows substitution not changing over the range $16 to $20, under cash subsidy conditions, as explained with reference to curves 11 and 12.)

The participation corresponding to the maximum effectiveness point is 86 (per cent or number, since 100 eligibles are assumed). It should be noted that the participation curve (curve 3) holds constant at 100 until a purchase requirement of $21 is reached, when it begins to drop. The shape of this curve beyond $20 depends on the shape of the frequency distribution of eligible families among the normal food expenditure classes.

If the approximately $1,000 in blue stamp grants required to obtain the maximum effectiveness of $767 can be afforded to subsidize this group, it would seem that the possibly competing purpose of obtaining high participation would also be approximately achieved. The 14 eligibles shown as not participating in this example would have to spend on orange stamps from $1 to $3 more per month than customary in order to obtain the $11.50 worth of free blue stamps. If all 14 did so, bringing participation to 100, cost would rise by $161 and effectiveness by $183 (not shown graphically). Hence, if people are willing to participate even though the purchase requirement is a little above their normal food expenditures, effectiveness will be maximized with a requirement a little higher than shown in this illustration. This influence cannot be considered very important. Effectiveness and participation can be raised principally by better classification of eligibles, i.e., consideration of other variables than family size and income, by finer classification of family and income, and by better education as to the nature of the program.

Chart 11 reveals quite clearly that if blue stamp outlays must be reduced much below the $1,000



Legend: 3, participation (number and per cent); 5, normal food expenditures; 6, orange stamp purchases; 7, blue stamp grants; 8, program food expenditures; 9, effectiveness; 10, substitution; 11, 12, 13, see text. Curve numbers refer to column numbers in table 9.

CHART 11. Influence of orange stamp purchase requirement on aggregate cost, effectiveness, and participation. 1–2 blue-orange ratio.

TABLE 10

INFLUENCE OF ORANGE STAMP PURCHASE REQUIREMENT ON AGGREGATE COST, EFFECTIVENESS, AND PARTICIPATION

With variable blue-orange ratio
(no above-minimum purchases)

Normal monthly food expenditures per family (also orange stamp purchase requirement)	Aggregate blue stamp grants ($35 minus orange stamp requirement per participant)	Aggregate value in food stamps (col. 6 +col. 7)	Aggregate effectiveness (col. 8 −col. 5)	Aggregate substitution (col. 7 −col. 9)	Percentage: Effectiveness (col. 9 ÷col. 7)	Percentage: Substitution (col. 10 ÷col. 7)
Col. 1	Col. 7[a]	Col. 8	Col. 9	Col. 10	Col. 11	Col. 12
16	1900	3500	1000	900	52	48
17	1800	3500	1000	800	56	44
18	1700	3500	1000	700	59	41
19	1600	3500	1000	600	63	37
20	1500	3500	1000	500	67	33
21	1372	3430	970	402	70	30
22	1222	3290	914	308	75	25
23	1032	3010	810	222	78	22
24	803	2555	654	149	81	19
25	580	2030	491	89	85	15
26	378	1470	329	49	87	13
27	216	945	194	22	90	10
28	98	490	90	8	92	8
29	36	210	34	2	94	6
30	10	70	10	0	100	0
31	0	0	0	0	0	0

[a] Columns 2–6, inc., same as in table 9.

level, the reduction should take the form of a reduction in the one-two blue-orange ratio, to say one-four. For curve 7 (blue stamp outlays) to drop to say $500, with the one-two ratio, would mean a freezing requirement of $26 and participation of only about 40, although effectiveness would be about $450. In contrast, use of a one-four ratio would leave the maximum effectiveness point at $23, with participation at 86 and effectiveness at about $375, for a cost of $500. With these alternatives available, an informed administrative agency would almost certainly choose the second.

It should be added that if above-minimum purchases of orange stamps were permitted and made, with blue stamps granted at the customary ratio, the maximum effectiveness purchase requirement would be raised if orange stamp purchases exceeded normal food purchases for any participant and aggregate program food outlays, blue stamp grants, and effectiveness would also be increased. Examples can readily be worked out.

Next, let us consider a second example which leaves the frequency distribution of eligibles among normal food expenditure classes the same and assumes the same relation between the orange stamp purchase requirement and participation, but employs a "variable ratio" of blue stamps to orange. Specifically, let it be assumed that blue stamps will be added to orange sufficient to bring the total up to a certain figure ($35 here) which is presumed to be the cost of an adequate diet (or a fraction of such cost). This contribution scheme was discussed at some length in the text and represents a practicable alternative to the constant ratio system. Table 10 and chart 12 supply the details of this example.

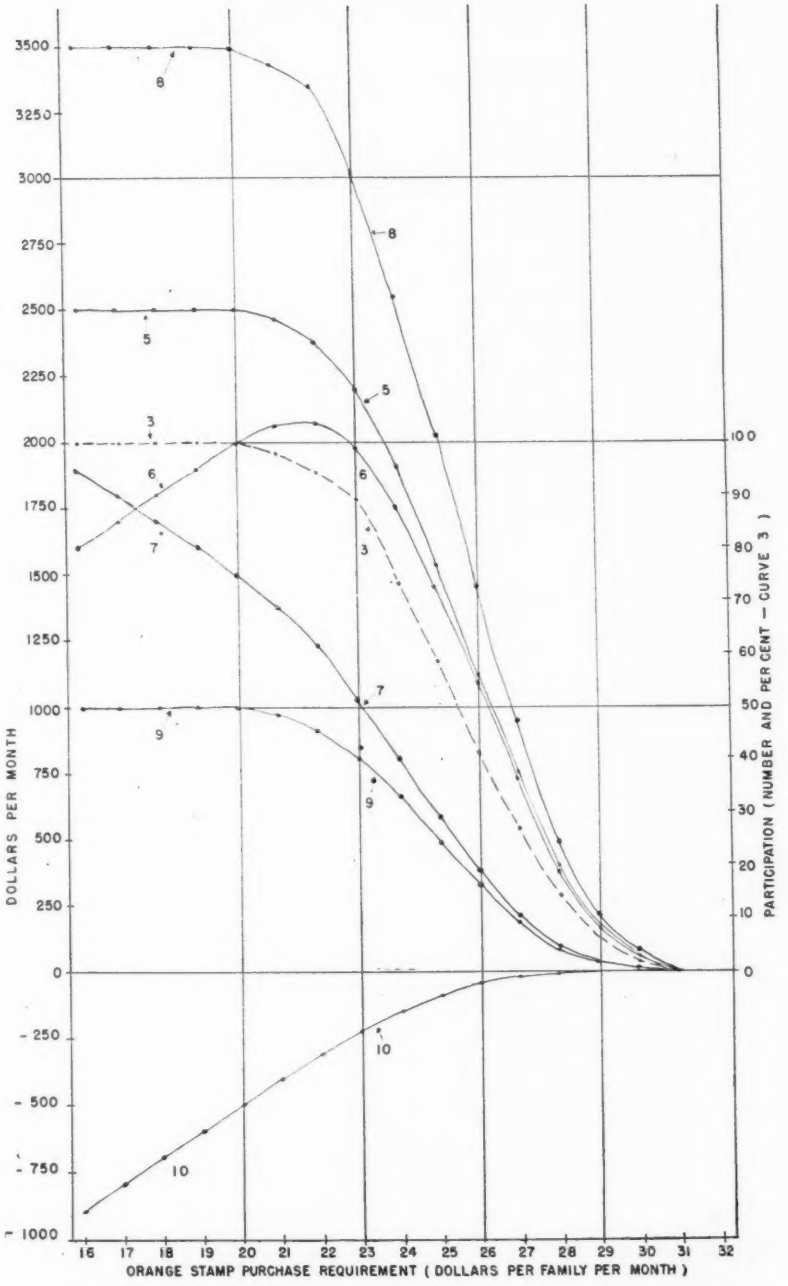
Normal food expenditures (curve 5) and participation (curve 3) are the same as in chart 11. The most striking conclusion to be derived from the relations shown in chart 12 and table 10 is that all three of the variables which are of significance in choosing the freezing point decline for purchase requirements larger than $20: effectiveness (curve 9), participation (curve 3), and blue stamp cost (curve 7). Therefore, if $1,500 can be afforded for this group of eligibles, the purchase requirement should be set at $20 because participation is 100 and effectiveness $1,000. Lower purchase requirements increase cost but do not increase effectiveness or participation; higher purchase requirements decrease cost but also decrease effectiveness and participation.

If the amount of money available for this group of eligibles were the same as the amount required to obtain maximum effectiveness under the first example, which employed the constant ratio (one-two blue-orange ratio) scheme, then the effectiveness and participation (curves 9 and 3) would be the same as in the first example. The figures used in these examples approximate this situation: the contribution at the optimum point under the one-two scheme is $11.50 for orange stamp purchase of $23, while the contribution at the same purchase requirement under the "deficiency" scheme is $12 ($35 minus $23).

If the fund required to fill up the deficiency when the purchase requirement is set at the lowest eligible family's outlays ($20 here) cannot be afforded for a particular group, the reduction in blue stamp outlays should probably be made by reducing the contribution toward the deficiency rather than by raising the purchase requirement to reduce the number of participants, even though effectiveness is somewhat less.

We have now considered two important variations in the relation between the blue stamp grant and the orange stamp purchase requirement;[1] the text deals at some length with the relation (or lack of relation) between participation and the purchase requirement; it remains to indicate the effect of varying frequency distribution of eligibles with respect to their normal food expenditures. The symmetrical distribution used in these examples had a coefficient of variation of 2.2/25 or 9 per cent, which indicates a dispersion considerably less than has frequently been found.

[1] A plausible compromise between these two arrangements would be to make the blue stamp grant equal to one-half the difference between the adequacy level (or fraction thereof) and the orange stamp purchase requirement; another, as in the 1946 Aiken Bill, is to express the purchase requirement as a percentage of income (e.g., 40 per cent).



Legend: 3, participation (number and per cent); 5, normal food expenditures; 6, orange stamp purchases; 7, blue stamp grants; 8, program food expenditures; 9, effectiveness; 10, substitution. Curve numbers refer to column number in table 10.

CHART 12. Influence of orange stamp purchase requirement on aggregate cost, effectiveness, and participation. Variable ratio.

There is no clear evidence of significant skewness in such distributions, but analysis shows that there would have to be considerable skewness before the conclusions reached here would be much changed. For example, under the one-two blue-orange system heavy bunching of cases at the lower end of the $20-30 range of food expenditures puts the maximum effectiveness freezing requirement at $22, while a parallel heavy bunching at the upper end of the range puts the maximum effectiveness at $24.

Lacking actual data on normal food expenditures for the families in a group, it appears safe to conclude that the freezing requirement should ordinarily be set as follows. First, with constant ratios, it should be set a little, perhaps one standard deviation, below the average normal food expenditures. Effectiveness and participation, to the extent that they work in opposite directions, which is only at the lower end of the range, will usually be reasonably compromised at this level. Further, if funds are not available to meet expenses according to a one-two blue-orange constant-ratio system, the blue-orange ratio should ordinarily be cut, instead of the purchase requirement being raised in order to economize, although this action favors participation as against effectiveness, assuming the rigid relation between participation and the purchase requirement.

Second, with variable ratios designed to fill up the food deficiency, the freezing requirement should ordinarily be set a little (perhaps 5-10 per cent of the mean) above the lower end of the range. The reason for going slightly above the lower end is to obtain additional effectiveness without losing participants; this obviously modifies the assumption of a rigid relationship between freezing requirements and participation in this part of the range.

Since the freezing requirement should apparently be set somewhat below the average of normal food expenditures in the case of constant ratios and somewhat above the lower end of the range of normal food expenditures in the case of variable ratios, perhaps the best general rule-of-thumb, if fairly full information is lacking, is to set the requirement at the lower quartile.

Finer classification of eligibles, with a view to narrowing the dispersion in food expenditures for any one group of eligibles, is the most fruitful way of minimizing the partial conflict between effectiveness and participation stemming from the necessity of setting a single freezing requirement for people having diverse normal food expenditures.

The text takes maximum effectiveness as the single goal for various reasons. First, the maximizing of effectiveness and of participation are not in important conflict, as these examples have shown. Second, participation is not neatly related to the purchase requirement, but depends on the several other factors discussed in the text. Third, the significance of a Special Purpose Money system lies not in its ability to get people to take something for nothing—that is easy—but in increasing outlays along specified lines, and effectiveness is the measure of this success.

B. INDIFFERENCE CURVE ANALYSIS APPLIED TO THE FOOD STAMP PLAN [1]

This appendix is devoted to the discussion of the effects of a "special purpose money" program, such as the Food Stamp Plan, upon the expenditure patterns of individual participants. Indifference curve technique is employed in this analysis. The method used is an adaptation of that of J. R. Hicks, as set forth in his *Value and Capital*.

Chart 13 provides the essential assumed data for the analysis. The assumptions involved in the chart are such as to make the situation of the hypothetical individual reasonably typical of actual situations.

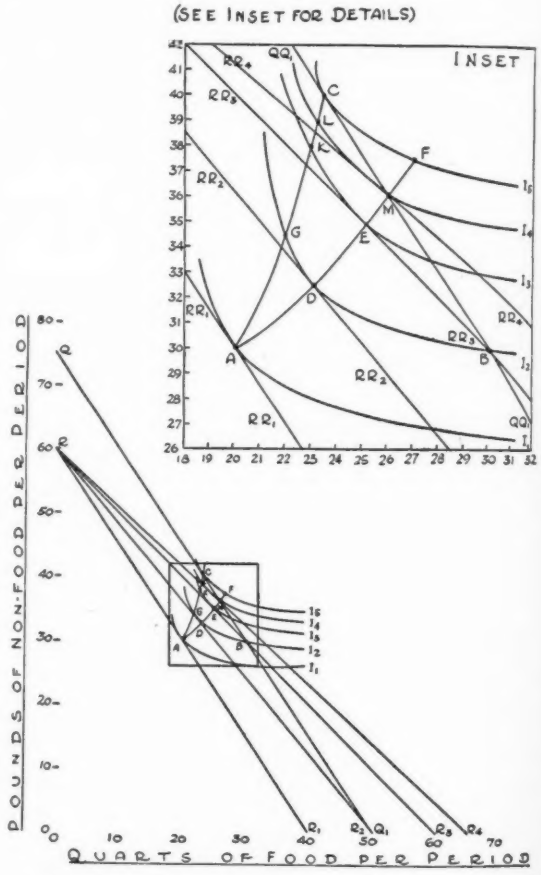


CHART 13. Indifference-curve analysis of effects of stamp plan on an individual participant.

[1] This appendix appeared in the *American Economic Review* 35 (1), Mar., 1945, in approximately the present form.

It is first necessary to explain the chart in detail. Let it be supposed that the individual devotes all of of his income to two commodities, food (on the x-axis) and non-food (on the y-axis), and that his income is obtained and expressed as non-food. The unit of measure for food is taken to be the quart; for non-food the pound. The lines RR_1, RR_2, QQ_1, etc., are sometimes designated, in this type of analysis, "outlay lines," because any "consumption point" on one of these lines (say, point A on RR_1) shows the amounts of food and non-food which could be purchased by this person with the outlay of a given income (income 60 pounds of non-food or 40 quarts of food in the case of RR_1). They are also designated "price lines" because the slope of the lines shows the "price" or exchange ratio of food, in quarts, per unit of non-food, in pounds (or *vice versa*). The coordinates of any point on a line such as RR_1 express the amounts of food and non-food obtained by expending a given total income. Thus at point A on RR_1 20 quarts of food and 30 pounds of non-food are obtained. The x-intercept (R_1) shows the amount of food (40 quarts) which would be obtained if all the individual's income were devoted to food; the y-intercept (R) shows the amount of non-food (60 pounds) which would be obtained if all his income were kept in the form of and devoted to non-food.

Viewed as a price line, RR_1 shows that the ratio is 2/3 of a quart of food per pound of non-food, or 1½ pounds of non-food per quart of food. Although there need be no misunderstanding in referring to these lines as price lines, it is usually preferable in this discussion, because only two commodities are involved, to call them "exchange-ratio lines." Exchange-ratio lines RR_2, RR_3, and RR_4 show the effects of varying the exchange ratio between food and non-food: food becomes cheaper in terms of non-food (and conversely, non-food becomes dearer in terms of food) as we move from RR_1 to RR_4. For example, the exchange ratio expressed by RR_4 is 13/12 quarts of food per pound of non-food, or 12/13 pounds of non-food per quart of food, whereas with RR_1 it takes only 2/3 of a quart of food to obtain a pound of non-food, or 1½ pounds of non-food to obtain a quart of food. In other words, the price of food declines from 1½ pounds of non-food per quart to 12/13 pounds of non-food per quart. (The particular ratio, 12/13, represented by RR_4 is chosen for use in the example below.)

When the exchange-ratio line in operation is RR_4, total income is still 60 pounds of non-food, but becomes equivalent in exchange value to 65 quarts of food. It is customary to say that income has not risen under these conditions because income, assumed to be received in the form of non-food, remains at 60 pounds of non-food. Obviously this is a restricted meaning of "income," and should be literally understood as signifying only that income measured in the receipt medium of non-food has not changed. Exchange-ratio lines above and parallel to RR_1, such as QQ_1, indicate larger incomes but with food and non-food having the same exchange ratio as in the case of RR_1; lines below and parallel to RR_1 would indicate lower incomes; lines neither parallel to RR_1 nor having the same x- and y-intercepts would represent changes in both income and exchange ratio, but such lines are analyzable into these two components. In the case of exchange-ratio line QQ_1, which shows a rise in income from RR_1 without any change in the exchange ratio, the increase in income may be measured along either axis without ambiguity, from R to Q in terms of non-food, or from R_1 to Q_1 in terms of food.

Curve I_1 is an indifference curve, which shows the combinations of quarts of food and pounds of non-food which would make this individual equally well satisfied, i.e., combinations which are by hypothesis indifferently acceptable to him at any given time and under any other relevant, defined conditions. Indifference curve I_2 traces out combinations of food and non-food in the same way, but the points on I_2 represent higher-satisfaction combinations than the points on I_1. Similarly, I_3, I_4, and I_5 are still higher indifference curves. The entire family of indifference curves of this individual, from which these five are taken for purposes of the example used in the analysis below, represents the taste pattern of the individual. A person seeks to dispose of his income so as to place himself on the highest indifference curve in his system that prices will permit. The taste pattern must be distinguished clearly from the expenditure pattern, i.e., the division of income among various uses, which is determined by three factors, namely, taste pattern, prices, and income, assuming, of course, that these three factors are independent of the expenditure pattern. The fact that the segments of the indifference curves shown in the chart have a negative slope reveals that this person considers food and non-food substitutes for each other, i.e., he is just as well satisfied with a certain amount less food if he has a certain amount more non-food, and *vice versa*. The fact that the curves are convex to the origin means that the person has a diminishing marginal rate of substitution of food for non-food, i.e., he will accept additional units of food in place of non-food (say, rightward from point A on I_1) only if he receives continuously larger amounts of food per unit of non-food given up. The convexity also implies a diminishing marginal rate of substitution of non-food for food. The shapes of the curves in the diagram are arbitrary, though plausible. Indifference curves are extremely difficult to obtain empirically.

We now consider the effects—in terms of satisfaction to the individual and the increase in food purchased by him—of (1) a reduction in the price of food and (2) an increase in income involving the same cost in terms of non-food. Under each case we also con-

sider the effects of a defined restriction on the individual's freedom of consumer choice. The cost of the price reduction or of the income increase is calculated at the original exchange ratio of 1½ pounds of non-food per quart of food and the cost amounts to 15 pounds of non-food in all four of the cases analyzed below. The cost is incurred by whoever makes the food available to the individual at lower prices or increases the individual's income.

Before taking up the four cases, let us define clearly the starting position for the analysis. If the person has freedom of choice in allotting his income between food and non-food at a given exchange ratio, he will choose the highest-satisfaction combination for him, i.e., the one which will put him on the highest indifference curve in his system of curves. This means, of course, that the combination he chooses freely, with a given income and exchange ratio, is *ipso facto* his highest-satisfaction combination. Thus, with an income of 60 pounds of non-food and with the exchange ratio 1½ pounds of non-food per quart of food (as shown by RR_1), the person will choose the combination of food and non-food represented by point A, on the highest indifference curve (I_1) which RR_1 touches (lower indifference curves not shown). The selected combination is 30 pounds of non-food and 20 quarts of food.

(1) Now if the price of food in terms of non-food were lowered, as represented by a change in the exchange-ratio line from RR_1 to RR_4, the person would find, with free choice and with the same income, his maximum satisfaction point at M on I_4, involving the holding of 36 pounds of non-food and the purchase of 26 quarts of food with the other 24 pounds of non-food. Thus the reduction in the price of food from 1½ pounds to 12/13 pounds of non-food per quart of food evokes an increase in food purchases from 20 to 26 quarts and in non-food holdings from 30 to 36 pounds. These increments combined cost 15 pounds of non-food (or 10 quarts of food) at the original exchange ratio.

(2) Had the person been denied freedom of choice in his expenditures, e.g., had he been prevented from acquiring or keeping the additional non-food obtainable at the lower exchange ratio, and had 15 pounds of non-food been devoted to the price decrease, the price change would have been from 1½ to 1 pound of non-food per quart of food (RR_3), and he would of necessity have settled at point B on the lower indifference curve I_2, with 30 pounds of non-food and 30 quarts of food. (Conceivably, the indifference curves could be of such a pattern that I_4 would be tangent to RR_3 at B, in which case denial of freedom of choice would be unnecessary to achieve the division represented by B because all of the person's additional economic power resulting from the price reduction would have voluntarily been devoted to food.) The interference with his freedom of consumer choice places the individual on a lower plane of satisfaction, I_2 instead of I_4, even though the two price reductions cost the same (15 pounds of non-food). The individual would prefer to hold some of the additional non-food in accordance with his preexisting taste pattern instead of spending it all on food. Hence, he would tend to try to improve his position—get on higher indifference curves—by moving up RR_3 from B toward E (on I_3) by evading the restriction.

(3) Consider next an increase in income for the individual costing the same as the price reductions (15 pounds of non-food). Suppose first that the individual has freedom of choice in the allotment of his income. The increased income is represented by the intercepts of line QQ_1, parallel to RR_1, the increase being shown either on the x-axis (10 quarts of food) or on the y-axis (15 pounds of non-food). It is clear from the chart that the equilibrium or maximum-satisfaction point under these conditions is point C, where QQ_1 is tangent to the indifference curve I_5. The individual is on a higher indifference curve than when he was the beneficiary of an equal-cost price reduction with freedom of choice (point M on I_4 in case (1)).

(4) If the individual were denied freedom of consumer choice and were required to devote the entire increase in income to food and also to maintain his former purchases of food, the equilibrium point would be point B at the intersection of QQ_1 and indifference curve I_2. Thus the individual, if he abided by the prohibition, could not but allot his expenditures in the same way as in the case of the equal-cost price reduction without freedom of choice.

Certain conclusions may now be drawn. This person gets the greatest satisfaction if he receives 15 pounds of non-food in the form of increased freely-expendable income (point C on I_5). Next best to him is the price reduction with freedom of choice (point M on I_4). The other two cases, price reduction without freedom of choice and income increase without freedom of choice, put the individual who conforms to the restriction at point B on I_2. Hence, *ex ante*, the results coincide. But in the case of the price reduction without freedom of choice, the individual is "pulled down" along RR_3 only from point E on I_3 to point B on I_2; whereas in the case of the income increase without freedom of choice the individual is pulled down along QQ_1 from point C on I_5 to point B on I_2. Hence, *ex post*, the limitation of choice imposes a greater loss of satisfaction in the case of the income increase than in the case of the price decrease. From the point of view of the individual, the income increase with restriction on freedom of choice as explained is the least attractive of the four alternatives considered.

It does not follow that it would necessarily be inappropriate public policy to pursue either of the courses which involve restriction. The individual

may not know what is best for him; his health and long-run welfare may well call for 10 quarts of additional food instead of an equal-cost combination involving some non-food and less than 10 quarts of additional food, even though the alternatives do not currently look equally attractive to him. Also, there may be general social reasons for imposing the restrictions, e.g., moving more food off the hands of the suppliers. These remarks are not designed to advocate either position.

Consider now the increases in food consumption brought about by these four equal-cost alternatives. In the case of price reduction with freedom of choice, the increase in food takings amounts to 6 quarts; in the case of price reduction without freedom of choice (assuming conformance), 10 quarts; in the case of income increase with freedom of choice, 3½ quarts; in the case of income increase without freedom of choice (again assuming conformance), 10 quarts. Thus from the point of view of moving additional food, a price reduction with freedom of choice is superior to an income increase with freedom of choice (a yield of 6 quarts as compared with 3½); and a price reduction without freedom of choice is likely to move more food than an income increase without freedom of choice because of the greater pressures for non-conformance in the case of income increase than in the case of price reduction. Income increase with freedom of choice is most attractive to the individual but least attractive as a device for moving food; the cases involving restriction of freedom are the best for moving food, but the price reduction distorts the individual's (*ex post*) expenditure pattern less than the income increase.

It is also pertinent to answer this question: How much would it cost to make the individual just as well off—put him on the same indifference curve—with freedom of choice, as he was made by the compulsory expenditure technique accompanied by the income increase or price reduction? In terms of the chart, how much would it cost to put the individual on I_2, which he is on at point B, with freedom of choice? By means of a price reduction, it would mean putting the individual at point D on I_2, and would cost, moving from point A and using the original exchange ratio as in the preceding analysis, 7 pounds of non-food (2½ pounds of non-food plus 3 quarts of food at 1½ pounds per quart). By means of an income increase it would require putting the individual at point G on I_2, and would cost, on the same basis, 7½ pounds of non-food (4½ pounds of non-food plus 2 quarts of food at 1½ pounds per quart). Whether the price-decrease or the income-increase method is cheaper depends on the shape of the indifference curve: no *a priori* conclusion can be drawn.

However, an income increase and a food price reduction yielding equivalent satisfaction will always, with indifference curves convex to the origin, result in more food being taken in the case of the price reduction than in the case of the income increase. This may be observed graphically in the chart by reference to AF, the "price-change consumption curve," and AC, the "income-change consumption curve." AF describes the locus of points of tangency between the indifference curves and the exchange-ratio lines RR_1, RR_2, etc., as they fan out from R as a pivot to show lower food prices. AC describes the locus of points of tangency between the indifference curves and the exchange-ratio lines RR_1, QQ_1, etc., as they shift upward and parallel to RR_1 to show increase in income. (The exchange-ratio lines determining points G, K, and L are not shown.) The extent of the divergence between the price-change consumption curve and the income-change consumption curve depends on the slopes of the indifference curves, i.e., the taste pattern of the individual. Convexity of the indifference curves to the origin precludes coincidence of the two consumption curves.

The Food Stamp Plan corresponded, in terms of the present analysis, to the case of an increase in income accompanied by restrictions on freedom of disposal of income. In terms of the chart, the plan provided for a parallel shift in the exchange-ratio line from RR_1 to QQ_1, representing an increase in income, and required, in principle, that the division of expenditures between food and non-food represented by point B on QQ_1 be adhered to. Funds for raising food expenditures 50 per cent were made available to the participants free of charge: in the chart food purchases were to increase from point A (20 quarts) to point B (30 quarts) per period. The income with which the participant purchased the 10 quarts was identified (marked) as expendable for food only. (The gratuity was nominally expendable for only a certain list of food items, but in fact the list was usually sufficiently broad or compliance sufficiently lax to make the distinction between this "marked money" and the money normally spent on food operationally meaningless for the participant.) With a view to ensuring that the person not divert to the purchase of non-food any of his income normally spent on food, such income had to be identified as usable or expendable for food only. This requirement was known as the "freezing requirement" under the Food Stamp Plan. Any increase in non-food expenditures accompanying the plan was known as "substitution." To the extent that this diversion occured, the special purpose money mechanism and/or compliance with it were faulty. Graphically, substitution meant the sliding of the "outlay-point" up QQ_1 from point B toward point C. If the freezing requirement were entirely inoperative in practice and if there were no change in the participant's taste pattern, the participant would settle at point C, his maximum satisfaction point under the given con-

ditions. If he did so, the 15-pound or 10-quart subsidy would evoke only a 3½ quart increase in food purchases, so that the plan would be only 35 per cent effective, and substitution would amount to 6½ quarts of food or 65 per cent. Actually, substitution averaged 30–40 per cent.

There is considerable qualitive evidence that the Stamp Plan brought about changes in the taste pattern of individuals in favor of food. In terms of indifference-curve analysis these changes would mean changes in the slopes of all indifference curves such that both AC and AF would incline more to the right than they do in the chart.

If the 15-pound subsidy had been given to this participant in the form of a food price reduction, as represented by a swing in the exchange-ratio line from RR_1 to RR_3, with the requirement that non-food expenditures not be increased, the participant would again have been expected to divide his purchases in the manner shown by point B on RR_3. But in this case the effective freezing requirement would have pulled him down only from M on I_4 to B on I_2, instead of from C on I_5 to B on I_2, as under the mechanism actually employed by the Food Stamp Plan. Had the administrators of the Stamp Plan decided that the price-reduction technique was administratively feasible, compliance would have been psychologically easier than under the income-increase system. It is interesting to note that the price-reduction approach was actually considered when the Stamp plan was being planned in 1938, but that it was rejected as being more difficult to administer than the income-increase system, employing a special purpose money known as food stamps. However, the technical administrative problems may not be insuperable.

Had the price-reduction approach been employed without a freezing requirement, i.e., without any restriction on the participant's distribution of his income between food and non-food, substitution would have been 40 per cent and effectiveness 60 per cent, as calculated in moving from A on I_1 to M on I_4 in the illustration represented by the chart. Now it so happened that for a number of reasons, some avoidable and some not, substitution under the Stamp Plan was, in various places, as much as 40 per cent, although generally it was about 35 per cent. Hence, with taste patterns similar to that shown in the chart and with a satisfactory administrative procedure for giving participants lower food prices at retail, approximately the same effectiveness could have been obtained without the use of the rather complicated freezing requirement and without any special purpose money. Our participant's satisfaction could thus have been raised from I_1 to I_4 and his food consumption raised 30 per cent (60 per cent of the cost) by a price reduction costing 15 pounds of non-food without the freezing requirement. It should not be assumed hastily that participant taste patterns are correctly reflected in the chart.

How much would it have cost to put the participant on I_2 without restriction of his freedom of choice? (Point B on I_2 is where the Stamp Plan intended to put him, but I_3 or I_4 is the indifference curve to which he probably maneuvered himself by various types of legitimate and illegitimate evasions.) Using the income-increase method it would have taken 7½ pounds of non-food to move him from A to G, while using the price-reduction method it would have taken 7 pounds of non-food to move him from A to D. (Note again that one method is not necessarily cheaper than the other.)

Let us now state briefly how much non-food it would cost, under each of the four alternatives, to evoke a certain (say, 6 quart) increase in food consumption by this individual: (1) price decrease from 1½ to 12/13 pounds of non-food per quart of food with freedom of choice, 15 pounds of non-food (point M on the chart); (2) price decrease from 1½ to 1 pound per quart without freedom of choice as defined, 9 pounds (coordinate values: $x=26$, $y=30$); (3) income increase with freedom of choice, 32 pounds (coordinate values: $x=26$, $y=52$,—52 not on chart); (4) income increase without freedom of choice, 9 pounds (coordinate values: $x=26$, $y=30$). Assuming compliance with the restrictions, alternatives (2) and (4) are considerably cheaper than (1) and (3). As pointed out above, purchase of the 6 quarts of food is more likely under (2) than under (4) because the pressure for non-compliance is not as great. The following table gives the ranking of the four alternatives from the points of view of increasing the satisfaction of the individual and moving additional food (the latter ranking is the same whether expressed as the varying results of a given cost or as the varying costs of a given result):

Alternative	Increased satisfaction to individual	Increased consumption of food
	Rankings	
(1)	2	3
(2)	3	1
(3)	1	4
(4)	4	2

It would appear to be a discovery of considerable practical significance that a subsidy system involving a price reduction and a freezing requirement calls for less distortion of the participant's expenditure pattern than a subsidy system involving an equal-cost income increase with a freezing requirement, though they would yield the same increase in food consumption when functioning properly. The quantitative difference depends on the slope of the indifference curves. It is believed that the illustration used here has no "special-case" implications.

It is interesting to consider the relation of Hicks's concepts of "income-effect" and "substitution-effect" in connection with the present analysis. A reduction of the price of food represented graphically by the change from RR_1 to RR_4 would, with consumer freedom of choice, find the participant in equilibrium at point M on I_4 and RR_4. By Hicks's method, this result is analyzable into two effects, the income-effect, represented by the movement from A out along the income-change consumption curve AC to the point where it cuts I_4 at L, and the substitution-effect, represented by the movement down I_4 from L to M. The income-effect of a price reduction is the increase in income which would be necessary to put the person on the same indifference curve on which the price reduction places him. In this example it is 9 pounds of non-food and 3¼ quarts of food (from A to L), convertible into 13⅞ pounds of non-food or 9¼ quarts of food at the original exchange ratio. The substitution-effect is measured in the same way as any movement along an indifference curve: hence the movement from L to M constitutes a substitution of 2¾ quarts of food for 3 pounds of non-food.

A fully effective subsidy system involving a food price reduction and requiring consumption at point B by means of a "freeze" reduces the income-effect by LG (from AL to AG) and forces a substitution-effect of GB on I_2 (i.e., of 8 quarts of food for 4 pounds of non-food), which is larger than the substitution-effect of LM on I_4 (i.e., of 2¾ quarts of food for 3 pounds of non-food) evoked without a freeze.

An income increase represented by the change from RR_1 to QQ_1 would find the individual, if unhampered in his choice, in equilibrium at C on I_5 and QQ_1. In this case there is no substitution-effect, since an income change is not accompanied by a substitution-effect when the person has freedom of choice. However, if this increase in income is accompanied by a freezing requirement of the type required under the Stamp Plan, expenditures would, under the perfectly functioning plan, be divided between food and non-food as represented by point B. This fully effective freezing requirement would reduce the income-effect by CG (from AC to AG), and would produce a substitution-effect again represented by GB on I_2.

Thus the fully effective Food Stamp Plan reduces the income-effect more than does the alternative price-reduction system with freezing requirement (CG as compared with LG). The substitution-effect is the same in both cases. This is another way of formulating the conclusion reached above that the psychological basis for conformance is stronger with the price-reduction technique than with the income-increase technique.

The relation between Hicks's substitution-effect and the concept of substitution as used above should be noted. If food purchases only are considered, Hicks's substitution-effect resulting from the reduction in the price of food is the increase in food purchases over and above the increase in food purchases represented by the income-effect. Graphically, it is the difference between the abscissas of L and M in the case of freedom of choice and between the abscissas of G and B in the case of restriction on freedom. The (food) substitution-effect in the case of the income increase technique as employed by the Food Stamp Plan is also the difference between the abscissas of L and M.

Substitution in our sense is simply the increase in non-food expenditures resulting from the price reduction or income increase. Graphically, it is the ordinal difference between A and, say, M in the price-reduction case, and the ordinal difference between A and, say, C in the income-increase case. Substitution is zero at B in either case when the restriction on freedom is imposed. The relation between the two concepts may be summed up as follows: the the greater the substitution-effect the less the substitution of non-food for food.

C. SPECIAL PURPOSE MONEY AS RATION MONEY

If a special kind of money can be used to provide people with *more* of particular commodities through the normal channels of trade, why can it not be used to provide them with *less*? Such a restriction of purchases is a possible employment of the Special Purpose Money technique and, indeed, "coupon money" has been used for rationing purposes much more extensively than for supplementation. Also, there is considerable literature on the principles and techniques of rationing. Consequently, Ration Money, or "contraction" Special Purpose Money, need not receive more attention here than is required to show its close relation to "expansion" Special Purpose Money. The discussion will relate to domestic consumer rationing only.

The first step in establishing a rationing program, once the need for it has been settled, is the selection of the Ration Commodities. Ration Commodities should be those the purchases of which it is desired to reduce below the level of purchases being made at the prevailing price. Since a sufficiently high price will always restrict demand to any given supply, the problem of rationing arises only when it is considered desirable for the available supply to be distributed among demanders according to a pattern which cannot be achieved under unregulated marketing and pricing processes. Ration Commodities tend to be "necessities" because a government rarely undertakes the difficult, unpopular, and expensive task of enforcing maximum prices and rationing goods and services unless these goods and services are extremely vital.

The next step is to determine what persons are eligible to receive Ration Money. Consumption units, i.e., families, certain unattached individuals,

and certain institutions would ordinarily be declared eligible. It is probable that such eligibles would have to be certified by a "Rationing Authority" in order that the exact number and types of users could be determined.

The rules under which eligibles might become participants deserve brief mention. The general rules would be that the participants not hold "unreasonable" stocks of Ration Commodities and that they spend the Ration Money in approved ways. Commodities which are close substitutes for Ration Commodities need not be frozen into some form of Special Purpose Money. Indeed, just the reverse! Demand should be diverted into relatively plentiful substitutes to as great extent as possible. Closely related is the suggestion that a certain quantity of cash be frozen into Special Purpose money expendable only on plentiful and nonessential commodities, as a condition for obtaining Ration Money. One form of this notion would be to require people, except the poor, to purchase government bonds, which might be considered a form of Special Purpose Money expendable only in the more distant future, as a condition for receiving Ration Money. The spillover effects of rationing on substitute and complementary commodities should be noted. As the purchases of Ration Commodities are cut down, the purchases of some other commodities will increase (substitutes) and the purchases of still others will decrease (complements). These effects should be anticipated wherever possible in order that their significance may be ascertained. But if the Ration Commodities are not numerous, these secondary effects will not be large, ordinarily, because of the tendency for the enforced redistribution of expenditures to be spread over many other commodities.

How much Ration Money should be made available to participants? or, stated otherwise, how much of a particular type of Ration Commodity should participants be allowed to buy? The answer depends in the first place on the total supply available to domestic consumer users. Next, it depends on the method of distributing the available supply among the participants. For many consumption goods an equal number per consumer unit or an equal number per capita would appear reasonable, although modifications of such simple distribution rules would ordinarily have to be made in order to accommodate individual needs more closely. It is possible of course for the allotments of Ration Commodities to exceed normal consumption for some families, but this would be impossible on the average since the purpose of the entire arrangement is to reduce consumption below what it would otherwise be.

Eligibles who wished to become participants would purchase Ration Money with their regular money or, more satisfactorily ordinarily, would be issued Consumer Purchase Warrants which they would have to present along with regular money in order to obtain Ration Commodities. More administrative flexibility is obtained by the use of Consumer Purchase Warrants since no particular price would be involved and the issuing agency would not have to handle cash. Issuance of Consumer Purchase Warrants could be quite infrequent, but the time period over which any given volume of warrants could be used should be quite short in order to keep consumer inventories at a low level and in order to regularize the marketing process through time.

The rules governing expenditure of Consumer Purchase Warrants are fairly simple. A legitimate bearer would have the right to purchase during a stated period of time a specified amount of a particular commodity from an authorized supplier, ordinarily any such supplier rather than a particular one. There would seem to be no harm in permitting the transfer of the Consumer Purchase Warrants among eligibles, since comparatively few people would have any desire to curtail further their already restricted consumption and since the few wishing to exchange them would have the full opportunity to use them to obtain the Ration Commodities or to barter off the commodities later. If many participants desired to transfer their Warrants, it would be clear evidence of a system of grants which failed to take into account individual differences in normal consumption of the commodities in question.

The original redeemers of the Consumer Purchase Warrants would be the regular sellers of the Ration Commodities. They should probably be registered in order to make sure that they understand and comply with the rules concerning the purchase and sale of Ration Commodities and the redemption of Warrants. The main rules which they would have to obey would be (*a*) that they sell Ration Commodities only when Consumer Purchase Warrants are presented in proper number (and perhaps by proper persons), (*b*) that they not carry unusually large stocks of Ration Commodities, (*c*) that they not make illegitimate quality changes or charge premiums for Ration Commodities, and (*d*) that they redeem the Warrants through propér channels. The Warrants, once used, must not go back into the hands of consumers except as properly issued by the Rationing Authority. The simplest redemption device is for them to be passed back through the chain of suppliers to the stage of production at which suppliers are least numerous or through the banks; here the Rationing Authority steps in to collect the Warrants.

In case it is deemed necessary to exercise close government control at various stages of the distribution and production process, the following system might be used. The original receiver or redeemer of the Consumer Purchase Warrants would present them to the Rationing Authority which would issue him in return Retailer Purchase Warrants which would

enable him to acquire a new stock of the Ration Commodities from wholesalers or other suppliers. Retailer Purchase Warrants would be issued in larger denominations than Consumer Purchase Warrants, but would be granted approximately in accordance with redemptions of the Consumer Warrants. Some variation might be necessary in order to handle seasonal changes, provide for increased or decreased amounts of Ration Commodities available, or the changing sales volume of particular sellers. Retailer Purchase Warrants, which retailers would have to present to their suppliers to obtain their new supplies of Ration Commodities, should probably be made transferable among retailers in order to provide the flexibility needed to adapt the flow of new supplies to the retail outlets obtaining a growing share of the total sales volume. It might be feasible to issue Wholesaler Purchase Warrants, etc., to provide wholesalers or other intermediate distributors with access to supplies of Ration Commodities.

These various types of Warrants will be recognized as similar to the wartime preference rating certificates and allocation orders used to direct the flow of producer goods into particular channels, although the Warrants discussed here represent the looser type of allocation order, under which the legitimate bearer acquires access to a specific amount of the designated commodities but not from a specific supplier. Such an order has been called a "hunting license."

There are certain general observations to be made regarding the establishment and operation of a rationing system. One of the most important considerations is that people should be adequately informed concerning the program. Of course, since curtailment of consumption is one reason for employing rationing, the Rationing Authority should make public appeals and conduct advertising campaigns to reduce "participation" and divert tastes from Ration Commodities. Also, wide knowledge of the rationing rules is absolutely essential to efficient and equitable functioning of the program. The public must be convinced that the rationing plan and administration are fair. Closely related is the desirability of keeping the mechanics of the plan simple. The list of Ration Commodities should not be any longer than is absolutely necessary, for rationing imposes rigidities upon consumption behavior and leads to compliance problems which are not easy to manage. In fact, rationing involves a large law enforcement problem, since it means trying to make millions of consumers and business firms follow rules contrary to their ordinary consumer and producer interests. And, unlike the expansion Special Purpose Money programs, rationing does not sugar the pill of distorted taste patterns with a subsidy. (In time of war, expansion Special Purpose Money programs for selected groups such as vital war workers, children, and the very needy, might well be combined with rationing measures.)

By far the most difficult part of a rationing program is securing compliance with the maximum price and maximum purchase rules. Since the supplies allotted to purchasers are limited in relation to what they would be willing to take at the fixed maximum price, it is a constant temptation for the sellers to ask for a premium over this price or to deteriorate the product. And buyers are willing, if they have no effective alternatives, to pay premiums for the Ration Commodities, especially for more than their proper quantities. The initiative may come from either the buyer or the seller. The premium may take various forms, such as a reduction in quality of service, raising the price of other commodities, as well as a crude cash bonus. It is not impossible, of course, for the Rationing Authority to be bribed or induced in less obvious ways to provide buyers with more than their proper amount of purchase warrants, although few consumer users would deal in large enough quantities to warrant their taking the risks involved. Extensive compliance machinery and severe penalties become necessary to secure obedience of the regulations.

All in all, rationing and the correlative fixing of maximum prices should be avoided unless the prospective benefits are great, as in time of war. If opportunities at all permit, the man-power, creative energy, and materials necessary to the operation of a rationing program should be employed to increase the supply of the commodities in question or reasonably satisfactory substitutes. And fiscal-financial measures should be utilized extensively to reduce the demand for them, although such measures cannot entirely remove the need for rationing and price control as devices for assuring an equitable flow of goods to consumers, a proper flow of goods to and from producers, and a lower public financing task than would otherwise be possible.

INDEX

Above-minimum purchases, 145, 150
Agricultural Marketing Administration, 134

Blue stamp foods, lists of, 136
  selection of, 136
Blue stamp grants, in general, 143
  per person, 145

Certifying families as eligible, 140
Competition, definition of, 155n
Complementary commodities, 147, 155

Effectiveness, definition of, 146
  ways of fostering, 146
Eligibles, classes of, 139
Eligibility rules for participation, 138
Exclusion points, 139
Expenditure rules, 151, 152

Federal Surplus Commodities Corporation, 133
Federal Surplus Relief Corporation, 133
Fixed blue-orange ratio, 143
Food purchase studies, 150
Food stamps, 134
Food Stamp Plan, administration of, 134
  effects on farmer, 175–176
  effects on income distribution, 176
  effects on economy, 177
  effects on well-being, 177
  geographic coverage of, 139–140
  improvement of, 184
  legal basis of, 135n
  main features of, 133
  outlays for, 134
  principal problems of, 135
  public reception of, 134
  relation to relief and social security system, 185
Frozen money, definition of, 146
Frozen money purchase requirements, 145

Grant-in-aid system, 152–153

Illustrative model for showing effects, 155
Independent commodities, 147, 155
Indifference curve analysis, 192 ff.
Issuance procedures, 151, 152

Licensing system, 151

Needs, definition of, 139
Non-participation by eligibles, reasons for, 154

Orange stamp purchase requirements, 149

Parity, 136
Participation by eligibles, 154
Poverty, 138
Primary effectiveness, definition and measurement of, 158, 170
  factors determining, 171
Purchase requirements, setting of, 149, 187 ff.

Ration money, 135, 197 ff.
Redeemers, 151, 152
Redemption procedures, 151, 152
Reduction of eligibles' incomes, 152
Revolving fund, 140

Secondary effectiveness, definition and measurement of, 158–161, 172
Special commodities, 134–135
  selection of, 135
Special purpose money, definition of, 134
  "contraction," 134
  "expansion," 134
  grants, 140
  potentialities, 177
Special purpose money program, analysis of effects of, 155 ff.
  conclusions regarding effects of, 168
  for many commodities, 177
  for producers, 179
  international, 182
  primary objective of, 135
Structural defect, definition of, 148n, 149n
Substitute commodities, 147, 155
Substitution, definition of, 146
Surplus commodities, definition of, 132, 136
Surplus Marketing Administration, 134

Time substitution, 149

Under-issuance, 150

Variable blue-orange ratio, 143

and

f, 134

alysis
68

, 149n

132,
134

XUM